An Answer to Dr. Clapp's Reply.

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I have carefully read Dr. Clapp's reply, and find a few things in it that call for attention.

The readers are referred to the opening paragraph of chapter 12, (Text-Book): "The use of more than one material for filling a single cavity was suggested by the observation of the condition of fillings composed of but one material and noting the effects of time and use thereon." If "sufficient reliance was placed on the intelligence of the readers of it to know when the method described would be helpful," it should have been so stated, and there should have been something said about the occasional use of combination fillings being useful. As it stands the reader must necessarily feel that the writer of this chapter makes no other than combination fillings.

It is to be regretted that Dr. Clapp did not read the criticism more carefully. If he had, he would not have interpreted it as he has. If a "disdainful disregard" had been mine, there are two or three paragraphs in this chapter which could have been quoted that would have caused much amusement for the men in the profession for many years to come.

I am quoted as saying: "It is a mistake to fill cavities that have neither pits nor undercuts," etc., etc. Dr. Clapp assures me that "a careful reading of the second paragraph on page 274 (Text-Book) will show that no cavity of this kind was mentioned except to explain the peculiar qualities of certain kinds of gold." My apologies to Dr. Clapp and the readers of the ITEMS OF INTEREST. Although I read "angles" in the book "pits" in some way got into my mind. Under the head of various kinds of gold in combination we will find this, paragraph 2, page 274: "By using these golds for starting cavities, the peculiar qualities just referred to will be exhibited. For illustration, we will take an extreme case—that of a shallow circular cavity in the buccal surface of a lower molar. This cavity is entirely without angles or undercuts, its walls flaring outward, the bottom being flat, or as nearly so as it can be made with a large bur (see Fig.

274). A piece of plastic gold a little larger than the cavity is placed in position then with a flat, very slightly serrated instrument (a, Fig. 270), it is carefully and gently worked into place." Fig. 270 represents a buccal cavity in a lower molar tooth that is 6.35 millimeters mesio-distally by 5.3 millimeters gingivo-occlusally, the depth pulpo-buccally 1.9 millimeters. I gravely question the advisability of even suggesting that cavities of this kind should ever be made. I have used some plastic golds, but I cannot depend on their adhering to tooth substance. On page 644, September ITEMS OF INTEREST, last paragraph, all is stated that is necessary in regard to this subject.

Resistance of Amalgam in Relation to Thickness.

On page 261, line 5, (Text-Book), will be found this: "The amalgam need not be more in amount, at this point, than the thickness of an ordinary visiting card." An ordinary visiting card measures three-tenths millimeters in thickness. For the purpose of ascertaining what an amalgam of this thickness would crush at, an experiment was made which may be of interest to the readers. The alloy was composed of silver 55, tin 40, copper 5. The fillings made in the cavity block with mallet force have repeatedly sustained 900 lbs. without crushing. The size of the fillings is 2.5 millimeters high by 3.5 millimeters in diameter (cylinders). The method of making these fillings is purely mechanical. The alloy is mixed with mercury, any excess of mercury being expressed by wringing in a muslin cloth. The mass is then broken into small pieces; a piece large enough to fill the cavity one-third full is placed in the cavity in the steel block. A mallet (with a three millimeter smooth point) which strikes a two-pound eleven ounce blow, is now used and the amalgam receives ten blows. Another piece of amalgam is placed in the cavity; this in turn receives ten blows. Then a third piece of amalgam is placed in the cavity, filling it somewhat over full, and this receives ten blows. Each filling has thus been made of three pieces of amalgam and has received thirty blows in all. I made a series of fillings in this manner on the 14th day of September. All the fillings were made from the same mass. On the 21st of September some of them were handed Mr. C. S. Sutter, a very prominent watchmaker in this city, and he was requested to turn some down to the thickness of three-tenths millimeters, others four-tenths millimeters and some five-tenths millimeters, and one or two, one millimeter. On September 28th he returned them. I first took a full sized cylinder (two and a half by three and a half millimeters) and placed it in the compressor. I placed 700 lbs. on this filling and let it rest there for a few moments and then removed it. I next placed a block one millimeter by three and one-half millimeters, in the compressor; 450 lbs. were placed on this filling, and this did not make any impression on it.

I next placed several pieces, five-tenths millimeters by three and one-half millimeters, into the compressor and they broke when 35 lbs. was placed on them. The four-tenths millimeters were next placed in the compressor, and they went to pieces when 25 lbs. was placed on them. The three-tenths pieces were next placed in the compressor and each and every one went to pieces before the 10-lb. point was reached on the compressor. We have here then absolute data that speaks for itself and tells its own story. I claim that it is wrong for any one to advance ideas of this kind, for they do much harm. There are many amalgam fillings made in cavities of the human teeth that are much larger than two and a half by three and a half millimeters; to fill these cavities three-quarters full of cement and then place thin amalgam fillings over them, is a practice that cannot be too severely condemned. The very first time any heavy stress comes upon them they go to pieces. If Dr. Clapp has never seen such results, I have, and I think there are many others in the profession who have also seen the results of this kind of work. We know definitely with how much force people can bite with the incisors. Dr. Black's record is 260 lbs. I hold it is not right, with a record of this kind staring us in the face, for any one to place an illustration in a text-book like that on page 261, Fig. 255 (Text-Book), and state: "The amalgam need not be more in amount, at this point, than the thickness of an ordinary visiting card." Amalgam at all times, in any and all cavities, must be more in quantity at every point than the thickness of an ordinary visiting card or else we may have the pleasure of doing the work over again in a very short time. Dr. Clapp's defense of this statement is well worth reading twice.

The Proper Sphere of Amalgam.

It is to be regretted that Dr. Clapp, having stated that amalgam saves teeth better than gold, did not give some definite reasons for this. The mere statement that it does, does not carry any weight. In this age we must have proof. One cannot make a sweeping assertion of this kind unless he is ready to back it up with such convincing evidence that men will know he is right. Amalgam has a large and useful field and it fills it. It cannot for one instant be confused with gold, nor can it occupy any of the territory allotted to gold. I will acknowledge that there are certain men in the dental profession, who attempt to force amalgam into the gold territory, but its residence there is but for a short period, merely temporary; just as a barefooted urchin, who has accidentally crept in at an afternoon reception, does not stay, because he is out of his element. Amalgam outside of its own field is as so much dross. Amalgam in the ten anterior teeth is, in the vast majority of cases, merely a temporary filling, and it should not be used under any consideration in the incisors or cuspids

that have living pulps. Occasionally there may be found a pulpless bicuspid, having a disto-occlusal cavity, where it is permissible to use amalgam. The ten anterior teeth are too delicate, where the pulps are alive, to have amalgam fillings placed in them, and where this is done upwards of ninety per cent. of the fillings must be replaced in less than five years. Amalgam fillings when made in cavities that are scientifically prepared, the margins extended, the occlusion studied, a proper provision made for the seating and the anchoring of the filling and the conditions such as to preclude the possibility of making a gold filling, will answer in many cases, but amalgam in itself, without any consideration being given to the proper formation of the cavity, is simply useless. The attention of the profession is called to a case under treatment at the present time.

Mrs. T——, age 22, consulted me in regard to the condition of the mesial surface of a lower right first molar. There was an amalgam filling in this surface, and a cavity of decay was discovered between it and the gum line. The teeth were separated and gutta-percha placed between them for a few days. This was about a week ago. She visited me later as per appointment and before the rubber dam was adjusted the crown of the tooth was measured. All measurements in millimeters.

6.4 height from gum line to the height of the mesio-buccal cusp.
7.3 mesio-distal width at gingiva.
9.7 greatest linguo-buccal thickness.

The filling was removed and measured.

5.9 linguo-bucco-gingivally.
5.9 linguo-bucco-occlusally.
2.5 width gingivo-occlusally.
1.8 greatest thickness pulpo-mesially.

And now for the size of the cavity. It was:

5.9 linguo-bucco-gingivally.
5.9 linguo-bucco-occlusally.
5.7 occluso-gingivally.
3.0 pulpo-mesially at gum line. (Pulp exposed.)

These measurements were made before the decay was removed from the cavity.

Here was a cavity of decay on the mesial surface below the filling that was:

5.9 linguo-bucco-gingivally.
3.4 gingivo-occlusally.
3.0 deep.

Now here was a copper amalgam filling which did not preserve the tooth. Had the previous operator extended this cavity so that a healthy gum septum would have covered the gingival portion of the filling, there

would not have been in less than three years' time, a cavity of decay more extensive than the size of the filling. Amalgam, as I said before, must be used with a certain degree of intelligence or it should be let alone.

The Matrix and Amalgam.

Let those who are interested in the tying of the matrix as illustrated, Fig. 259, page 263 (Text-Book), try the method there advanced and then take another cavity and pass the ligature but twice around the tooth and the matrix at the gingiva; let both cavities be filled with amalgam and after it is set, let them be polished. I do not think there will be any question in regard to which is the better method.

In regard to leaving the matrix in position a considerable time after the filling has been made, I will say: Somewhat over three years ago I sent to a dentist of Chicago, a formula for an alloy, which he very kindly made for me. After making several tests for flow and crushing stress, I filled some cavities in teeth with it. It was a very quick-setting amalgam. The more I used it, the better I liked it. The attention of the profession was called to it on several occasions; at our State meeting and at a clinic in Chicago, in February, 1897. Those that are interested in this subject are referred to the April, 1897, *Review*, page 264. Within two minutes and ten seconds, the filling is sufficiently hard to trim. Now I want to ask in all sincerity, what the object is, of leaving the matrix *in situ* when we have many quick-setting amalgams on the market at the present time? There has not been a single angle of an amalgam filling fractured, either by the removal of the matrix or from the occlusion of the teeth, since quick-setting amalgams have been in use in this office. They are of greatest value to us for one reason and that is, that the majority of the polishing can be done within a few minutes after the filling has been made. They are of value to the patients also, for the reason that the latter can eat on the fillings at once, if they so desire.

There seems to be a difference of opinion in regard to the care necessary to make good amalgam fillings. There is a difference in the methods in use by different men in relation to packing amalgam. If the statement I make is so extraordinary, it may be made still more so when I say, that I would rather make twenty proximal gold fillings than one proximal filling of amalgam. That is my way of looking at amalgam fillings.

Will some one kindly tell us what the difference is between "soft amalgam" and "amalgam that is soft." Considerable stress seems to be laid on this particular point by Dr. Clapp. He clearly does do this (advocates soft amalgam), or else he has never informed himself as a professor in one of our colleges should do, in regard to the amalgam question; for on page 269 (Text-Book) he states: "As soon as the gold touches the amalgam it will absorb mercury, and sometimes several pieces of gold will

be entirely amalgamated." Every rule for the packing of amalgam is here violated. Dr. Black has stated time and again that the mercury should not appear under our plugger points during the process of packing the amalgam. I do not at any time, lead the readers of any article that I may write, to believe something that is not so. There are one or two other places in this chapter where soft amalgam is spoken of, but this one instance is sufficient.

Dr. Perry's essay in the *International Dental Journal* has been read and reread. There is no desire on my part to criticize Dr. Perry's article. It gives me great satisfaction to call the attention of the profession to an article in the September *Cosmos* by Dr. C. N. Johnson, a man who is as well and favorably known in the West as Dr. Perry is in the East. Dr. Johnson's practical knowledge and ability as a tooth saver are too well known for me to say more. Every dentist should read this essay.

The Matrix and Gold.

I really do not know where to begin when it comes to speaking of the use of a matrix when proximal gold fillings are to be made. It does not seem necessary for me to do more than to call attention again to what Drs. Black and Ottolengui have said in relation to this subject. I think it is well to let the matter rest there. The field has been covered. Since I wrote the criticism there has been a State meeting held, where five men gave gold clinics at one time, in proximal cavities in bicuspid and molar teeth. Four of the men were well grounded in the Black principles and did not use a matrix; the fifth man had the smallest cavity and used a matrix. The four men prepared, filled and finished their operations (not using a matrix) in less than one hundred minutes. The fifth man (with a matrix around his tooth) took three hundred and sixty minutes to prepare, fill and finish his proximal filling. I do not think it is necessary to comment any further, unless it be to call the attention of the profession to the case of a lady who consulted me within the past two weeks in regard to the condition of her teeth. She informed me that her dentist told her her teeth were very soft. For the past twenty years, she had been compelled to have many fillings removed, as the teeth continued to decay around the margins of the fillings. The teeth were examined, and I found thirty-one proximal fillings, twenty-nine of which had been made of gold. Nineteen had cavities of decay around the margins of the gold. The other ten will have, sooner or later, cavities of decay. Meeting her old dentist, I asked him his method for making proximal gold fillings; he said: "After the cavity is prepared, I place the matrix tightly around the tooth and shove a sheet of number four gold against the gingival margin. The gold is always unannealed. I then mallet it home. Then I commence to pack annealed gold and continue until the cavity is filled." Now here

is a man who has been practising dentistry for somewhat over thirty years, a man of more than local reputation, yet he does not know the necessity for marginal condensation as described on page 534, *Cosmos*, 1891 (Black). Unless there is marginal condensation, there is a liability to overlook some small place that will endanger the entire usefulness of the filling. Of the man's method I have neither the time nor the patience for criticism.

There is no mention of cohesive or fibrous tin in chapter 12, (Text-Book), Dr. Clapp to the contrary notwithstanding.

I have read and reread chapter 12, (Text-Book), since receiving the proof of Dr. Clapp's reply and I desire to say that I will be very grateful to him, if he will kindly point out the paragraph in the Text-Book where such methods as those which I received in paragraph 5, page 643, Sept. ITEMS OF INTEREST, are described.

Preparing and Extending Cavities.

Dr. Clapp's excuses for Par. 1, page 268 (Text-Book): There is merely one statement that will receive my attention: "On the other hand, Dr. Wedelstaedt and every intelligent man in the profession knows that to perfectly pack gold it is necessary sometimes to sacrifice much valuable tooth substance, accompanied with pain to the patient and hard work for the operator, simply to get access." I do not know anything of the kind. There is never under any condition, pain arising from the removal of frail walls of enamel, (provided the decay has been removed from the cavity), frail walls of enamel, unsupported by dentine, for the reason that such enamel is practically dead. It has no direct or indirect connection with the pulp. I contend that this enamel is practically worthless, in the majority of cases, and it always is so unless it has sound tissue in its vicinity. As far as hard work is concerned; before I learned how to prepare cavities, it was hard work for me and it was accompanied by fearful pain in many cases, for the patient, but almost six years ago I learned what I should have known twenty years ago, and that was to keep my cutting instruments in proper condition for work. Every chisel, excavator, and drill that is used in an operation, is laid one side and is never placed in the case until it has been restoned. I find the preparation of cavities is a mere pastime at present, where formerly it was most difficult and trying labor. If it is necessary to gain access to a cavity, that access is obtained for all patients over fourteen years of age that are in a good condition of health.

It was unnecessary for Dr. Clapp to state from what source he obtained the principles he has seen fit to publish. He is too well and favorably known to write a chapter of this kind in a text-book. He certainly got the ideas here advanced in the way he states. Experience teaches and gives

men, if they observe their failures, somewhat different ideas than those he has seen fit to impose on us in chapter 12.

Cement Alone and in Combination.

I said in my criticism that it is a mistake ever to use soft cement for any other purpose than for capping pulps. It is also a mistake ever "to fill at once on any kind of cement." Here is Dr. Clapp's reply: "To my young readers, who have used soft cement for other purposes than capping pulps, and who have filled over cement for other purposes than capping pulps, and who have filled over cement at once, I will say: Do not be alarmed at what you have done; hundreds of dentists have been doing this right along for more than twenty-five years, and have had most satisfactory results. But never do this, or anything else in dentistry, with your eyes shut and your reasoning powers asleep."

In former times, physicians when called to see patients that had a fever, bled them or rather sent for a surgeon and had him do it. Before this practice was given up, it passed through the two steps of evolution which the rise of all rational opinions must necessarily pass through; those of ridicule and argument. How much I regret to see a statement of this kind from Dr. Clapp no one knows, and it is with greatest difficulty that I can write in a dispassionate way of any one who deliberately advances ideas of this nature.

I gave reasons that I considered were all sufficient why it was an impossibility for cement to strengthen frail walls (September ITEMS OF INTEREST, page 643, paragraph 2). Dr. Clapp has left the question unanswered when he says, "Why does a mason lay his brick in cement?" This is not a parallel case.

I ask of that portion of the profession who are interested in what an oiled burnisher will do, to a proximal filling of cement, before it has set, to fill a cavity in a tooth with cement and place it on the stage of a microscope (the one-inch glass will suffice). Each time the burnisher is used on the buccal side you will observe that the cement at the lingual margin will rise, and as you press the cement into its position at the lingual margin, you will note that it rises at the first margin burnished. I so wish Dr. Clapp had made this experiment, then he could have seen that the experiment that I have made over a half a dozen times with a half a dozen different cements, is exactly as it was described. Cements after being placed in a cavity should not be disturbed until they are fully hardened.

I am somewhat surprised at Dr. Clapp's statement in regard to the experimental fillings I have made with cement and amalgam. Luckily for us, I still have these fillings in the cavity block. The loss of these three

cavities has greatly hampered me in my experimental work for some weeks past. I have been carefully keeping them so that photo-micrographs could be made, so that the profession in general can see precisely as the members of our club have seen, the exact condition of these fillings.

Dr. Clapp has sent me a partly filled cavity. It is an occlusal one, involving part of the buccal and distal surfaces of the tooth. It contains a large mass of cement and a non-completed gold filling. He says "he anchored the gold into soft cement that could not be handled with the fingers." "Within five minutes after placing the cement in the cavity, he malleted the gold" that he had anchored in the cement. The cement used was Weston's. The margins of this cavity are devoid of any cement. The cement that is not covered with gold has been carefully examined microscopically. A one-inch power was used and then a half inch. I am very greatly surprised at two things; that Dr. Ottolengui and Dr. Clapp overlooked the condition of the cement, which is porous in many places, granular in others, and is cracked. It was not properly mixed, and I am somewhat "at sea" to know on what these gentlemen base the ideas they have seen fit to advance in regard to this being a "good method to follow." Do they not know that soft cement should be used for capping pulps almost exclusively? Where a filling material is anchored in cement and depends wholly on the cement for its anchorage, it is not stronger than the weakest portion of that cement. Precisely as "a bridge is as strong as its weakest timber," or "a chain as strong as its weakest link." Dr. Clapp has not made an investigation into this cement field. I am very certain if he had, he would not have advanced the ideas he has, nor would he have sent me the prepared and partly filled cavity to criticize, nor would he have used Weston's cement. I do not think the gold placed in a similar cavity (anchoring the gold into soft cement and depending entirely on this for an anchorage) would withstand the tension placed on it by eating caramels. These crush from 20 to 150 lbs. The force necessary to again open the jaw is equal to, if not greater than, the number of pounds necessary to crush the caramels. The force used to masticate food would, I feel, soon break the gold at the junction with the cement. I think this would be the only result that could happen. If the same method is used for proximal fillings in bicuspids and molars that are known as mesio-occlusal and disto-occlusal, the force exerted by the mastication of food will push a mesio-occlusal filling out of the cavity in a very short time. Have we not all observed the results of linguo-buccal anchorages in these cavities and how gold fillings and amalgam fillings, that were not anchored occlusally, have been moved right out of the cavity? In the disto-occlusal cavities filled by the method Dr. Clapp advises, I feel much trouble will result from the

force brought on the filling at the contact, during the process of mastication and by grinding the teeth. If this force is great enough to cause some of the facets on the enamel that I have seen, it is also great enough to break the slight anchorage that any metallic filling may have in soft cement, or fracture the cement. I have broken the union between gold and cement combination fillings with my thumb and nail, accidentally, on several occasions, and I regret to say Dr. Clapp has instructed some of the men who have made these fillings. There should be some supplementary anchorage made in the tooth substance. Reliance should not under any circumstances, be placed entirely on the cement for anchorage, and never on soft cement. When this cement question has been sifted, when something is definitely known in relation to this old subject, then and then only, can we speak with some knowledge in regard to it. At the present time it is a very mixed subject and little is known about it. All cavities should be prepared along the lines laid down in my former paper. The five forms that Dr. Black has thought out for our use, must be applied to the case in hand, as has been said before. If we do not wish to do this, let us leave the dental profession in the hands of those who will do these things, and seek other vocations.

Now in regard to the cements: I must necessarily be brief; the paper is already too long, so I can only go into those details absolutely necessary. I cannot enlarge on this investigation at this time. Attention is called to the results of some experiments, made with some of the cements at present on the market. With the exception of Ames Metalloid, and oxychloride, the cements were purchased at the dental depots. I desired merely to ascertain what their strength was, i. e., the amount of stress they would sustain before they would fracture. The cement marked "soft" in each case received the same number of turns of the spatula. Those marked "mallet" were made of three pieces of cement to a filling and each piece of the cement received five blows from a mallet (2 lb. 11 oz. blow). I do not wish to convey the idea that this is the greatest or least crushing stress that can be obtained by mixing the cements thinner or thicker, or by different manipulation for those that were rolled. The soft cement used for making the fillings, could not have been handled with the fingers. Experiments Nos. 71 and 72 are also given. The lowest crushing stress for the fillings in the columns marked lowest, was almost always the result of the first test at the end of twenty-four hours. The highest crushing stress was usually obtained at the end of ninety-six or one hundred and twenty hours, in some cases when the filling was seventy-two hours old. Seven or eight hundred fillings, perhaps a thousand in all, have been made to obtain these results.

Results of the Crushing Tests.

Table of the results of some experiments made with Cements to obtain some idea of their strength where different manipulation was used in mixing them. All fillings were two and a half millimeters high by three and one-half millimeters in diameter (cylinders).

	Pounds		
	Highest.	Lowest.	Average.
Oxyphosphates.			
Ames Metalloid, soft	130	65	94 4-9
Ames Metalloid, rolled (mallet)	200	140	170
Britton's, soft	55	140	45
Britton's, rolled	75	40	57½
Caulk's, soft	25	10	20
Caulk's, stiff mix.	95	40	79⅓
Hammond's Oxide, soft	120	55	94
Hammond's Oxide, rolled (mallet)	200	140	177
Justi's Insoluble, soft	90	25	70
Justi's Insoluble, rolled (mallet)	180	80	148
Weston's Insoluble, soft	10	5	6⅔
Weston's Insoluble, rolled (as per directions accompanying cement)	140	100	113
Oxychlorides.			
Ames, soft, (not mixed—saturated solution)	135	60	96
Ames, soft (consistency of thick cream)	150	120	137
Ames, mixed stiff (not rolled)	235	140	200
Justi's Acme, (consistency of thick cream)	100	60	75
Justi's Acme, mixed stiff (not rolled)	270	130	197
White's Agate, thick cream	185	130	160
White's Agate, mixed stiff (not rolled)	190	170	183⅓

Name. Weston's Insoluble Cement.

Experiment No. 71. Mix 5 times, 15 seconds each, (in all 75 seconds). Rolled 20 times.

Method. The cavity was filled one-third full and a pressure of about 25 lbs. placed on the cement. Another piece of cement was placed in cavity, filling it two-thirds full. This was packed in the same way. A third piece was placed in the cavity, filling it over full. This was also packed in the same way. Three pieces of cement to each filling.

Instrument Used. A round-headed burnisher, two and a half millimeters in diameter, that had a large ivory handle.

Size of Fillings. Two and one-half by three and one-half millimeters. Cubes were four by four by two and a half millimeters.

N. B. Mix 5 times. 4 drops of fluid were placed on the ground glass slab. A small quantity of the powder was mixed with it for 15 seconds.

Then more powder was added and mixed for 15 seconds. This continued until powder had been added to fluid five times in all. This made a very stiff mass. It was impossible to incorporate any more powder.

Tested.

15 minutes after making crushed at ..... 15 lbs.
30 minutes after making crushed at ..... 15 lbs.
45 minutes after making crushed at ..... 75 lbs.
60 minutes after making crushed at ..... 85 lbs.
75 minutes after making crushed at ..... 90 lbs.
2 hours after making crushed at ..... 85 lbs.
6 hours after making crushed at ..... 100 lbs.
18 hours after making crushed at ..... 95 lbs.

Cubes.

24 hours after making crushed at ..... 100 lbs.
48 hours after making crushed at ..... 125 lbs.

Name. Weston's Insoluble Cement.

Experiment No. 72. Mix and method same as No. 71.

Tested.

15 minutes after making crushed at ..... 15 lbs.
30 minutes after making crushed at ..... 25 lbs.
45 minutes after making crushed at ..... 35 lbs.
60 minutes after making crushed at ..... 45 lbs.
75 minutes after making crushed at ..... 45 lbs.
2 hours after making crushed at ..... 45 lbs.
6 hours after making crushed at ..... 60 lbs.
18 hours after making crushed at ..... 90 lbs.

Cubes.

24 hours after making crushed at ..... 85 lbs.
48 hours after making crushed at ..... 140 lbs.

Copied from record, August 13, 1898.

I think when I say I am unwilling, in view of these results, to place any metallic filling on soft cement, that I have good reasons for it, and I do not know on what Dr. Clapp bases his ideas in regard to his methods. There are on my table at the present time three cement fillings that have spheroided, 2, 1.3 and .8 millimeters, respectively. They are that much higher than the cavity block. I have seen any number of contractions and expansions, and I have seen enough spheroiding to cause me to change the methods that have been in constant use for upwards of twenty years. Dr. Clapp has sent me this partly filled cavity and he depends on soft cement (Weston's) for an anchorage of his gold. The table tells its own story and we can readily figure out the strength of his anchorage.

I criticised combination fillings as they were set forth in Chapter XII, American Text-Book, for a great many reasons; the main ones were given in my criticism. One cannot help but feel after he has carefully read this chapter, that it is advancing methods long since condemned and principles which cannot be supported by scientific investigation. That it is a long step backwards. Retrogression of a kind that no profession wishes, and that which should never be attempted. Somewhere I have read, "The ambition to do excellent work lies at the foundation, not only of all prosperity, national and individual, but of all progress." I should say that there should also be an ambition to advance excellent methods and a set of principles that would be a credit to the editor of a chapter and the dental profession in general. There should have been little space given Dr. Clapp's ideas in a text-book. Ideas are all very well in themselves and for us to assume they are right, but the moment we assert they are facts, we must be ready with proof to substantiate our allegations. This Dr. Clapp is not prepared to do, nor will he ever be, for the reason that he cannot find a foundation for his ideas to rest on. He has ventured beyond the circle of known facts. Speculation is all very well in its place, but it should be given little space in any text-book. And there should have been still less space devoted to such proximal cavity preparation as is illustrated on page 260, Fig. 254 (Text-Book).

Does Dr. Clapp lay the blame of recurrence of decay around the gingival margins of cavities similarly prepared (and they always do decay) to "Soft teeth?" Have none of the advanced theories that are so well established in the West been heard of in Boston? Or are they still struggling and protesting against their adoption, as in some other places?

This Chapter XII should never have been written. It is a great mistake to advance any such principles. There is the tendency to tempt many, who are earnestly striving to do their best, to leave the road they are traveling and make use of these principles before they have fully investigated them. In after years, when the fruit of their labor begins to return, they will see the results in their true light. There is but one line of work in operative dentistry in which a man can obtain any uniformity in his work and results, and that is where he uses gold for filling teeth. On such a foundation he can build, but he cannot on other filling materials, for he has simple ideas for his ground work, as against facts in the first named.

I promised myself I would condemn the placing of cement against all axial walls, as Dr. Clapp advocates. In 1884 I had an assistant in my office who placed cement in every cavity that was to receive a metal filling. He argued so well that he finally succeeded in persuading me also to use this method. Within two years patients began to return with

"Sore teeth," they called them. The fillings were removed and dead pulps were found. What cement was used may be asked? One of the best oxy-phosphates on the market then and at present. I firmly believe, I destroyed more pulps, or more were destroyed in the eighteen months that young man was in my office, than I have destroyed in all my practice with arsenic. I stopped the use of cement in the great majority of cases at once. Of course, I have a pulp die under my metal fillings now and then, but not more than one, where formerly I lost twenty-five. Now this has been my personal experience with cement. There are one or two men of worldwide reputation, who have had similar experience, or, at least, they told me that they had had, some ten years ago. I wish to ask, in view of this fact, how can I do otherwise than condemn combination fillings? Do we not know where we place gold crowns on teeth that have live pulps in them that it is but a question of time before the pulp dies? How, then, with this fact staring him in the face, can Dr. Clapp advocate the use of cement for all axial walls? I am perfectly willing to have my existing ideas disturbed and am willing to give up any theories I have when some one will show me they are a hindrance. I am willing, perfectly so, to accept new and better ones, anyone can bring in their place. But I cannot accept, nor do I think any intelligent man can accept, combination fillings as advanced by Dr. Clapp in Chapter XII, Text-Book.

There is one side of this combination filling question that has as yet not been presented, and that is the loss of time in making fillings by this method. It has received much careful thought from me, and I am somewhat surprised that it has not been thought of before.

Dr. Clapp states he commenced to mallet the gold "five minutes after making the filling" (of cement). It took him at least one minute to mix his cement and one minute to place it in position. That would make seven minutes in all.

I will take three cases from the record:

Miss D. Age, 19. Occlusal cavity. Lower left second molar. The crown of the tooth measured 5.6¾ millimeters high; 9.3-10 wide at gingiva; 9.0 thick. Cavity measured (all measurements in millimeters). 5.8, length mesio-distally; 2.0, width at distal; 2.9, width buccal groove; 1.3, width mesial; 2.2, depth distal; 2.2, depth buccal groove; 2.2, depth mesial. Amount of gold used, 7⅔ grains. Time to pack gold, six minutes.

Miss S. Age, 22. Occlusal cavity. Lower right first molar. Crown of tooth measured 6.35 high, 10.5 wide, 10.5 thick. Cavity measured 7.3, length mesio-distally; 3.4, width at distal; 4.75, width at buccal groove; 2.1, at mesial; 3.7, depth at distal; 4.1, depth at buccal groove; 3.4, depth

at mesial. Amount of gold used, 21 grains. Time to pack gold, 12½ minutes.

Let us take another case:

A mesio-occlusal cavity in an upper right second bicuspid. Dr. W. Age, 27. (All measurements will be given in millimeters.) Crown of tooth measured: 6.45 high, 5.975 wide, 9.3 thick. Cavity measured: 5.5, linguo-bucco-gingivally; 4.4, linguo-bucco-occlusally; 1.6, width of seat (pulpo-mesially); 3.3, width of step (linguo-buccally); 2.75, width of anchorage (linguo-buccally); 3.5, length of step (mesio-distally); 4.4, entire length of cavity (occlusal to seat); 3.2, depth of step (occluso-pulpally); 2.4, length from step to seat; 2.5, depth of anchorage (occluso-pulpally). Amount of gold used, 19½ grains. Time to pack gold, 20 minutes.

Here are three cases that are ordinary everyday operations that can be duplicated in almost anyone's office, any day. Would it be to the patient's or our own advantage to lose seven odd minutes' time in making these fillings? I ask of my readers that they make a careful comparison and decide which is the more practical. Which the better way, and by what method we gain the more? By stopping to use cement, or by making the filling? Let others decide this for themselves; I have done so many years ago.

There is something said about jewelry work in Dr. Clapp's reply. If the readers will take the September *Cosmos* and read Dr. Johnson's article, they may perhaps receive lasting benefit if they follow the ideas there suggested. Æsthetic principles are always considered in doing all dental work. I will not, however, jeopardize the stability of any filling for æsthetic principles, and I do not think anyone else who has the welfare of his patients at heart does, either.

I also have a notion and may also be old-fashioned and behind the times that when a dentist in 1897 edits a chapter in a text-book and ignores all the work of that body of scientific men who have labored honestly and with a conscientious endeavor to raise the profession to a higher plane, he should receive the just condemnation he so richly deserves, for he does more harm than one hundred reformers can do good. If he deliberately advances teachings which he cannot prove are true, which scientific investigation quickly shows are without foundation, he cannot be surprised and he ought not be astonished if he is roundly criticised for the erroneous and fallacious ideas he sees fit to publish. If an honest and bold criticism of this chapter is "lowering the personnel" of the dental profession, I most sincerely hope some one else will lower the personnel by criticising one or two other chapters that long since should have received their just deserts.

"I am not above error," but when I write for the instruction of the men in our profession it is to advance new ideas that will be of assistance to them in their daily labor, and not bring to their notice old, worn-out and condemned ideas that should never again be mentioned.

If a surgeon should write a chapter in the latest text-book, stating that whenever a laporotomy was to be made, he found it was not necessary to make an abdominal incision of greater length than one inch. Attempt to prove his statement by saying he had through this small opening removed both ovaries and the womb, on many occasions, what would be the natural result? He would be criticised by many intelligent surgeons and his methods condemned with greatest severity. Or, if a well known professor in a medical college would write a chapter in a text-book and state that he found the Lebenswecker and Oleum Tiglii was all that was necessary to cure any and all diseases flesh is heir to, he, too, would soon have his fellow practitioners giving him the benefit of their criticism. Chapter XII, American Text-Book, is on same order.

The independent intellects that are characteristic of the present age recognize this to be so. They also deplore the slow rise of all rational opinions.

Terminology. The editor of this journal has very kindly discussed some of the terms used in my September article. Terminology was never given a thought in preparing the paper for publication. I supposed, of course, these terms were in universal use as they are so precise and definite. They describe at once what is meant. My associates for a number of years past have been members of the dental profession. A definite nomenclature has always been used in our conversation when discussing dental topics. In all my teachings, those scientific terms suggested for our use by Dr. Black have been strictly adhered to and these same terms have been adopted by the men receiving instruction.

If I have a correct understanding, he desires me to know that he has not any knowledge of any definite nomenclature having been adopted by a body of scientific men for the universal use of the members of our profession. If such is the case this has been suggested to me: That the editors of our journals meet and deliberately discuss and adopt for their standard those scientific terms which have been suggested, that are definite and precise, and then use only such terms in the articles that are published in their journals. The members of our profession will take greatest pride in following the teachings laid down by the editors. We will not see such statements as these in our text-books, page 258 (Am. Text-Book), par. 2: "If a large number of amalgam fillings in crown cavities are examined," etc. Same page, par. 3: "If the same number of gold fillings in occlusal cavities are examined," etc. Nor will we

have, as I recently read in an article in one of our leading journals, the use of proximal, proximate, approximate and approximal in one article when proximal cavities are under discussion.

Occlusal is precise and definite. It cannot be confused. Crown has a definite meaning. Occlusal and crown cannot ever be confused.

I am taken to task for using proximal. On page 1036, *Cosmos* of 1896, is my authority. This is sufficient. I trust the editor of this journal will look up this authority and also note on page 711, September, 1898, *Review*, 14th line; he will find the Father of Nomenclature also is quoted as using "proximal."

My attention has been called to an editorial on page 84, *Cosmos* of 1880, written by the late Dr. J. W. White, also to a letter from Dr. Jos. Thomas that Dr. White published in his editorial. I have carefully read what is written and am somewhat surprised that the use of the term "proximal" has been under discussion for almost nineteen years, and still there seems to be a difference of opinion existing between writers in regard to the correct use of it. It is long past time for a final settlement of this matter. I am perfectly familiar with Dr. Black's ideas in regard to the use of this term. We have discussed it in the past. The fact that Dr. Black uses it himself, or he is credited with its use, is quite sufficient.

I am compelled to use definite terms in my work and writings. I am always anxious to use those only that are necessary, precise and cannot be misunderstood. I like the term proximal, it is short and, I feel, definite. The fact that it is used by the members of the medical profession is not any reason why it cannot be used by the members of the dental profession. I think the general tendency of the times is toward the use of short and explicit terms that can be understood by all inteiligent dentists. I hope to see published in the ITEMS OF INTEREST within a very short time, a complete list of those terms that are in use at the present time by many, and I trust no other terms will be used in the articles published in that journal.

Treatment of Sensitive Dentine.

By Dr. B. F. Arrington, Goldsboro, N. C.

This is a subject that has long interested and perplexed the profession, and has been exhaustively written about and discussed. Innumerable remedies and varied methods of treatment have been suggested and ably advocated. Possibly one of the most reliable remedies ever used to deaden sensitiveness of dentine, was one of the first introduced in practice more than forty years ago, chloride of zinc. It seldom failed to prove effective, but in its action it was somewhat like most of the local anæsthetics of the present day, recommended for the painless extraction of teeth; the application of the remedy in most cases was more acutely painful than the operation, consequently it passed out of general use.

Nitrate of Silver an Obtundent.

I have experimented with many remedies and tested carefully for favorable results or unfavorable, and now with an experience of more than forty years, nitrate of silver, in my judgment, has claim to superiority. When rightly applied it is more reliable than any single remedy or all others combined. It so perfectly controls sensitiveness of dentine that the operation of excavating can, in a large percentage of cases, be performed with comparative freedom from discomfort. The application of nitrate of silver is simple and easy, requiring but little time and is painless.

One excellent property of the remedy is its decay checking and tooth preserving power, when judiciously applied. It will check the progress of superficial caries or caries far advanced. I know of conspicuous cases of its effectiveness for periods of ten or more years.

The mode of application has much to do with its effectiveness. Finely crushed or scraped is the best form for use.

Some dentists object to the use of nitrate of silver because of discoloration, which we readily admit is an objectionable feature, but when advantages and disadvantages are rightly estimated, this feature is no serious matter and will not justify rejection of the remedy. A more general use of nitrate of silver in dental practice would, I believe, prove a professional step forward.

Cold Water an Obtundent.

In milder cases of sensitive dentine, calling for treatment less powerful in effect than nitrate of silver, I have found the flooding of cavities with a stream of cold water forced from a bulb syringe during the operation of excavating, very effective. It is unquestionably

the best mild method I have ever tried. The colder the water, in reason, the better for hasty results.

The first application of a cold stream of water into some cavities of decay will produce a perceptible shock, and in a majority of cases will be repulsed, but persistent application of the water for a few moments will prove very perceptibly soothing in effect, and the operation of excavating (preferably with spoon-shaped excavators) can be freely and forcibly indulged without expression of complaint from patient.

This is not a fancied theory, but it is a reality in practice based upon indisputable results. Any dentist can soon be convinced by experimenting with two corresponding cavities in the same mouth. Try one dry, with heat applied, the other flooded with cold water; the result will be definitely convincing, and the patient will express grateful appreciation of the flooding process.

I question if there ever has been a greater error or more unreasonable method in practice than drying and applying heat to cavities preparatory to excavating. Systematic experimenting will soon convince any one that the drying and heating process will increase rather than diminish sensitiveness of tooth structure.

Military and Naval Dental Surgeons.

By Dr. B. Lindsay, New York, N. Y.

Since the outbreak of hostilities between the United States and Spain first called for the mustering in of the volunteer forces of the various States, more interest in and knowledge of the methods and requirements of the army has been taken by our people than ever before.

Especially in our profession has the interest seemed intense, and now, as never before, has the profession seen and spoken of the need of dental specialists that exists in the army. Pens good, bad and indifferent have been used in the furtherance of this idea, which will, aside from being beneficial to the men of the army, place our profession on that plane, which, to the present time, we have failed to occupy—that of the medical specialist.

That our profession, as such, has made mighty strides cannot be denied, but the fact remains that we are still recognized by the masses as but a grade above the artisan. Nay, even the masses of the medical fraternity accept us generally on suffrance as their brethren in the noble art of healing.

Much has been written upon the need of the dentist in the army. As a dental surgeon, I am prepared to admit this; as a dentist, I deny the need. So long as the student of dentistry is not taught practically the art of oral surgery, which will enable him to become, not alone the dentist, but the dental surgeon, just so long will he fail to fulfil that need which exists in the armies of today. That as a dentist he could find plenty to do I will admit, but as a simple mechanic the government has no need of him, for at the present annual output of dentists, there can be no army post in the civilized world that has not a dentist within a reasonable distance. This being true, there is no excuse for the existence of carious teeth among the men stationed at these posts.

Moreover, and I speak from observation, not hearsay, the teeth of the average "regular" are exceptionally good. Living as they do, a hardy, regular life, having as food only the kind that will serve to strengthen the muscles and constitution, they have the teeth formerly possessed by the entire negro race when their food and life were as hardy and strength-giving as the soldiers of today. Hence I say, that as a dentist, I am not prepared to admit the need.

Dental Graduates Not Always Dental Surgeons.

Of the dental surgeon, the dentist who combines surgery with dentistry, none can see the need more clearly than I. But are we, as a profession, able to fill this need? Are our colleges even now giving us that knowledge and experience which enables us to assume control of and operate upon the entire lower portion of the face and neck? No. The oral surgery as taught in our colleges is generally optional, or at best theoretical. How many of us (and I speak now not of the M.D., D.D.S., but of the plain D.D.S.), how many of us if confronted with the necessity of removing the lower jaw, could perform the operation successfully? How many of us could even sew up the incision, using the best method, after the operation had been performed? Nay, more, how many of us could so easily administer an anæsthetic as to watch an operation while preserving an innate consciousness the while of the anæsthetic effect? I venture to say not one per cent. of the dentists of this country could successfully perform the last, and not one-hundredth of one per cent. the first operation.

Yet we cherish the idea that the dental profession as such, is in advance of the medical, in that the former specializes a branch of the latter. Do not be deluded, brethren, for when the dental profession can perform all operations relating to the maxillæ and oral cavity, and not until then, can it hope to take its true place as a specialty of medicine. And until it can take this place, it will fail to satisfy the need existing in the army of today.

Dentists Needed in the Navy.

It seems strange to me that all who have written on this subject, have developed only the need of the dentist in the army. The navy has never been mentioned, and yet to my mind, the need of the dental surgeon, both as dentist and surgeon, is far greater in the navy than in the army. It has been my peculiar fortune to work for many of the "men behind the guns," who participated in the blockade and bombardment of Cuba; men of the "New York," "Brooklyn," "Indiana," "Massachusetts," "Texas" and "Oregon," and to verify their tales of suffering by the surgeons of these various ships.

Picture to yourselves the suffering entailed upon a man who has an exposed pulp or an abscessed tooth, miles away from relief of any kind, forced to be exposed in all kinds of weather, and weeks and ofttimes months before even the chance is obtained of visiting a dentist! Naval men say there is not a day or night passes that three or four men are not actually crying with toothache. The surgeons on board never extract and can only give a little creasote to the men to relieve their pain.

Patients on land who, after a few hours suffering with a tooth, are nearly crazed with pain, can form some idea of the agony these men undergo who suffer for days without even the chance of having the tooth extracted, when it should be filled and saved. Every argument used in favor of the dental surgeon in the army is applicable to the navy, only increased fourfold. But while I hope with the "Jackies," that the time will soon come when the dental surgeon will take his place with the medical corps, I trust it will be as the "dental surgeon" and not as simply the "dentist," for at no time has the adage been brought home so forcibly as now: "In time of peace, prepare for war."

A Plea for the More Scientific and Careful Study of Materia Medica as a Branch of Dental Education.

By Henry H. Merrell, Ph.D., M.D., Chicago, Ill.

Read before the New Jersey State Dental Society, Asbury Park, N. J., July, 1898.

I am well aware of the fact that in almost every teaching corps it is quite usual that to each professor's mind, his or her particular chair appears to be of greater importance than any other one chair in the college. I do not by any means wish to be understood by the above that I consider the study of materia medica the most important one that occupies the mind of a candidate for the degree of Doctor of Dental Surgery during his term at college.

I do, however, consider it a much more important branch than it is wont to be considered. If within the scope of my paper I can present a few facts in such a manner as to cause more interest in, and consequently more study of this subject, be it however slight, I shall feel more than repaid for my efforts. Let us see for a moment what the study of materia medica really embraces, and then I think we will the more readily realize its importance. The word materia comes from the Latin, *mater*, or mother, and has been corrupted into "matter." We would have then from this as a definition of the study of materia medica, "A knowledge of the matter or materials used in medicine."

Dunglison says, in giving his definition that "It is a study of the tools with which the practitioner has to work." You will see from this at a glance of how great importance it is. What would be your opinion of a railway engineer who had made no very careful study of his engine? Would you care to trust your life during a railway journey to his keeping if you were aware that he knew little or nothing about the tools he was trying to manage? What should be your opinion of a medical man,

be he dentist or physician, who had made no very careful or accurate study of materia medica or the tools with which he was endeavoring to work and who regarded such study of minor importance? Would you, or do you think the public would, if they knew and understood the true state of affairs, care to trust their lives or their health to the keeping of such a practitioner?

We are wont to consider at the present day the dental profession as a specialty of medicine. If this view is correct, and I am of the opinion that it is, then it is no excuse for the Doctor of Dental Surgery to say that in his work he will use very little medicine, and, therefore, the study is of little practical value to him. One should not be considered competent to make a specialty of any branch of medicine until he has become conversant with general practice.

The classes of remedies used by the dental practitioner most largely are first, antiseptics; second, hemostatics; third, anesthetics, and fourth, escharotics.

Your committee requested me to say something about the newer dental medicines. Now at the risk of disappointing both you and your committee, instead I am going to make a plea for the more careful and scientific study of the older remedies and leave the newer ones to the hands of the numerous manufacturing concerns who are constantly putting them on the market, and perhaps before we are through we shall be able to see that the so-called newer remedies are only the older ones under a new name, and possibly slightly changed by combination so as to make them more agreeable, and incidentally, more salable.

Of the first class of remedies mentioned, viz., antiseptics and the one which has by far the greater practical interest to the dental surgeon, I will speak first.

Antiseptics. I have been wont to impress upon my class that an ideal antiseptic solution for dental use should answer the following requisites: First, it should possess high antiseptic properties. Second, it should be non-poisonous. Third, it should be odorless and tasteless, or at least not of a disagreeable odor or taste. Fourth, it should not stain. I am well aware that there are numerous antiseptic solutions on the market and their number is every day increasing, which answer these requisites fairly well, but they are proprietary preparations, and are consequently much more expensive than an antiseptic solution should be, which it is necessary to use so freely.

It has but very recently been discovered that acetanilid possesses high antiseptic properties, and it has been used with excellent results in an impalpable powder as a substitute for iodoform in dressing surgical wounds, ulcers, etc. It has occurred to me that a solution of

acetanilid in alcohol* (it is soluble in five parts of alcohol) would make an antiseptic solution of great value to the dental practitioner. I have used such a solution of the strength of 1½ drachms to the ounce of alcohol (made aromatic and agreeable, as well as increasing its antiseptic properties by the addition of a sufficient quantity of one or several of the essential oils), as a mouth wash, with very satisfactory results.

Prepared in any quantity at all it can be produced at very little cost; much less than any solution equally desirable with which I am familiar.

I have found that the best agent for sterilizing instruments is ordinary sal soda, or washing soda, technically, soda carbonas. Boiling the instruments occasionally in a weak solution of this salt will overcome inclination to rust and keep them bright and clean.

Hemostatics.

In my opinion there is opportunity for investigation and study in the line of hemostatics.

We all know the many objections to the iron salts or solutions. They always discolor the teeth, and often cause sloughing of the tissues and do not always arrest the hemorrhage. In ordinary surgical work styptics and hemostatics are very little used at the present day, but often after extracting a tooth, the practitioner is annoyed by a persistent hemorrhage.

Pagliaris Styptic prepared as follows, may be found of value:

Tr. benzoin	1 ounce.
Alum	2 ounces.
Aqua	20 ounces.

Mix and boil for six hours in a glazed earthen vessel, adding hot water to compensate for evaporation. Filter and keep in well stoppered bottles. A drop of this fluid poured into a glass containing human blood produces instantaneous magma.

Of anesthetics I will not attempt to say anything as it is a subject to which much more thought, space and time should be devoted than I can give to it.

I would urge upon the colleges the need of more thorough instruction upon the subject of prescription writing. Every graduate of a dental college should be capable of writing a prescription for what he desires in an intelligible and correct manner: something I am ashamed to say many cannot do.

*I am aware that some authorities claim that certain antiseptic powders lose their antiseptic value, partially at least, when dissolved in alcohol. I do not know whether this claim has been made in regard to acetanilid or not. I have never made or seen stated a scientific test of its relative antiseptic value, but practically, I have used it with very satisfactory results both as a dry antiseptic dressing, and in solution as stated.

Alveolar Abscess and Caries of the Maxilla.

By Dr. W. G. Chase, Princeton, N. J.

Read before the New Jersey State Dental Society, Asbury Park, N. J., July, 1898.

I ask your consideration of the diseases known as chronic alveolar paper from the fact that the one so often is the forerunner of the other. We are apt not to give the attention to a simple abscess that we ought. Having in my Princeton practice many students who come from all sections of the country, and many from other lands, I am frequently called upon to treat alveolar abscesses which should have received prompt attention at home, a course which would have saved the patients much discomfort and pain, especially as, in a number of instances, caries had set in. This neglect may or may not have been the fault of the patient,—I am not able to say. I do not believe all the statements made by the patients in reference to the treatment given them before coming under my care. I know by experience that patients, when relieved from pain, are prone to let matters rest until they have further trouble. There is no operation that meets with so little thanks, appreciation or remuneration, that we as dental surgeons are called upon to treat, as that of abscess or caries, yet they call forth all the knowledge and skill as a surgeon, of which the dentist is possessed, for in the treatment of such conditions, mechanics ceases and science commences from the fact that systemic conditions must be taken into consideration and dealt with in order to perfect a cure.

Chronic Alveolar Abscess.

Chronic alveolar abscess is the result of acute apical pericementitis, where the source of infection is not removed, and pus is formed through destruction of tissue. There are two forms, one where there is no fistula, and the other with a fistula through which pus is discharged into the mouth. In all such conditions we have a root apex denuded of tissue, about which will be found liquefied effusions and dead and dying blood corpuscles. The cavity thus formed around the root will be found to continually enlarge, though in long continued cases organization of the boundary wall may occur and the cavity be enclosed by a capsule of connective tissue of a fibrous vascular nature. Gravity has much to do with the direction of the burrowing pus, or destruction of tissue. In the lower jaw the tendency is to invade the cancellated tissue of the bone, leav-

ing the tooth, and thus not destroying the pericementum to any great extent. In the upper jaw the tendency is to spread along the pericementum, into the cancellated bone, often causing extensive excavation in the superior maxillary bone.

I will not go into the symptoms and diagnosis of the above conditions. Suffice it to say these conditions need early and prompt attention, and in many cases, heroic treatment. The treatment is first to remove the pus, dead tissue and infected organisms. The most successful method is to remove the mechanical impediment to a free and thorough washing of the pus cavity. If a fistula is established the case is much simplified and is much more amenable to treatment. In all so-called blind abscesses it will be found much more satisfactory to proceed heroically and establish a free artificial fistula. Cleanse the canals and fistula with peroxide of hydrogen, or sodium dioxide solution, following with such antiseptics as formaldehyde, oil of cassia, cloves, campho-phenique, etc. Dry the root canal and fill immediately. If any subsequent treatment is necessary, utilize the fistula.

The most resistive patients are those who are laboring under the effects of mercurial poisoning. In such, resort must be had to painting tissue with iodine and washes of capsicum and myrrh, alternated with potassium chlorate and cologne. Internally 10 to 15 gr. doses of potassium chlorate three times a day may be employed.

Rheumatism and gout are also conditions that will retard the healing of an abscess; not that they have direct relation, but through being depressant to the system at large. A few doses of colchicum will be found to act most admirably where gout or rheumatism is present.

A malarial condition, when present in the system, will complicate the treatment of an alveolar abscess. In such cases quinine is indicated.

Caries of Bone.

Caries is a disease very analogous to ulceration in the soft parts, and is possessed of the threefold expression: simple, strumus, and specific. Dead teeth and roots of teeth are the most common cause.

Caries may present all the external features of alveolar abscess, probably in an aggravated form. One or more fistulous openings will be found to exist in the gum or neighboring parts, around the orifice of which will be usually found fungus granulations. If a probe be carried through one of these sinuses, the bone will be found to be honeycombed, and easily broken down. (A common excavator makes one of the best probes. Being stiff and resisting one is better able to distinguish between the alveolar process and the diseased bone. An ordinary probe being soft and yielding would be liable to mislead). Uncovered bone, caused by uncomplicated

abscess, is hard and resisting. That of caries soft and easy to break down, which fact is the most reliable and certain of diagnostic features.

Carious bone presents peculiarities according to the duration of the disease and the cause inducing it. If seen early, the increased vascularity and congestion will be observed simply; later a cacoplastic exudate occupies the cells, which have become enlarged and their walls decalcified, and still later they will break down gradually, together with the semi-organized lymph exuded into them. On looking at the bone it will be found to be riddled with holes or cavities.

Virchow says: "The whole essence of caries consists in this; the bone breaks up in its territories, the individual corpuscles undergo new developmental changes (granulation and suppuration) and remnants composed of the oldest basis-substance remain in the form of small thin shreds in the midst of the soft substance. In ossification (in cartilage) there is a portion of the original intercellular substance of the cartilage cells (secondary cells), which, though belonging to the group as a whole, yet, when these in the course of ossification are transformed into a number of isolated bone cells, become, comparatively speaking, almost entirely independent of those cells individually (which have their own immediate intercellular substance to attend to), and, therefore, escape the changes which befall them. It is this portion which remains behind in caries, while the secondary intercellular substances perish."

In all inflammations about these parts, whatever their character and cause, the abortive treatment cannot be attempted too quickly. If left, or treatment is delayed, or cannot be carried on with sufficient vigor, the whole bone is sometimes destroyed.

The slowness or rapidity with which alveolar abscess and caries of the maxilla progresses is influenced by the conditions presenting in each individual. This is also true in regard to healing under treatment. It is undoubtedly a fact that nearly every case of caries of the jaw met with could have been aborted by the timely extraction of a certain tooth or teeth. But we do not wish to sacrifice our patients' teeth, and I believe that in most cases at least we can save them by prompt, and if need be, heroic treatment.

In compact bones, acute inflammation, if not followed by immediate resolution, ends in necrosis through the blood vessels becoming strangled. In cancellus bone, where the vessels have more room, dilation and exudation are possible and there is less solid bone to be absorbed. Dead bone may be absorbed as well as living: a sequestrum, so long as it is surrounded by living granulation-tissue (not by pus) gradually diminishes in size, being eroded and eaten into from the surface. The compact nature of the inferior maxilla probably explains why we have necrosis in that

bone instead of caries as a result of inflammation in the majority of the cases, while in the superior maxilla caries predominates from the fact of its cancellus nature and better blood supply.

The connection between diseases of the teeth and severe diseases of the jaw has been pointed out by Hippocrates. He wrote:

"The jaw of the son of Metrodorus mortified in consequence of tooth-ache and the gums became intensely swollen,—the suppuration was moderate. Not only the molar teeth, but even the jaw bone itself was thrown off."

It frequently happens in caries that nature seems unable to throw off the incubus of the disease and relief by operative means is demanded. We must also bear in mind that caries is frequently connected with taint of system, and constitutional care should be exercised in treatment. If the inflammation of the bone is in the acute stage, treatment should be on general principles; cathartics, diaphoretics, counter-irritants, in fact the general lessening of the blood pressure around the part affected, the practitioner being influenced by the resistance of the case. If a tooth is the cause it must be treated or removed. It is frequently the case that an asthenic type will be found even in the acute stage. In these cases iron, quinine, cod liver oil, etc., will be indicated.

If when a case is first seen the caries has become established, as recognized by the fistula, etc., vigorous tonic medication in conjunction with stimulating injections is to be used. The following will be found to serve well: Tincture of iodine, carbolic acid, compound tincture of capsicum and chloride of zinc. Of the tonics I prefer the iron preparations. A cure cannot always be expected from medication alone, and resort must be had to operative means, where nature seems unable to throw off the disease. In operating utilize the fistula as a guide. The bone is exposed by a simple incision, and with a rose burr cut away the softened bone. Sulphuric acid is a valuable remedy for the treatment of caries, it having the power to dissolve the dead bone. It can be diluted with 8 to 20 parts of water or the aromatic acid may be used. Caustic potash has been recommended but is not as efficient as sulphuric acid. In cases where but little tissue has been effected, tri-chlor-acetic acid will act very happily.

Case No. 1. Mr. B. A young man, in poor health, anæmic. Caries of base of alveolus of left lateral of superior jaw, involving the palatine process, with discharge through the tooth root and fistula over the root on buccal surface, tumor in roof of the mouth as large as half of an English walnut. Opened sac to give vent to accumulated pus, the bone being denuded to quite an extent. Washed the cavity out thoroughly with peroxide of hydrogen.

then injected sulphuric acid, 1 part of acid to 10 parts of water, each day for several days. Prescribed 10 drops of muriated tincture of iron three times a day, ordered nutritious diet and out of door life as much as possible. After the first few days I substituted tincture of myrrh and capsicum diluted to a milky color with water, as an injection, in place of the acid. The case healed rapidly.

Case No. 2. Mrs. R. Strong and healthy, caries at the base of alveolus of both upper laterals. Small tumor in palatine surface. Injected tri-chlor-acetic acid 1 to 20 daily for three days. Case healed rapidly.

Case No. 3. Miss J. Caries of superior maxilla at the base of right upper lateral, bone and apex of tooth root denuded of tissue. No swelling or tumor in mouth. Dissected tissue away, cut out diseased bone and cut off the apex of root of tooth. Packed with dilute sulphuric acid on cotton. Next day removed cotton and stimulated with tincture of iodine. Parts healed rapidly, new granulations being thrown out entirely covering tooth root, soft tissue healing with but a small scar.

In all of these cases I filled the tooth roots immediately so that no septic matter would be thrown down into them, and thus keep up a poisonous irritation.

Action of Sulphuric Acid on Bone. Sulphuric acid is the agent I rely most upon to dissolve the carious bone; it does not injure the soft tissue, when used in the dilute form. It acts chemically upon the diseased bone and is seldom followed with any degree of pain. I have used nearly chemically pure acid. For the stimulating effect I prefer the aromatic acid. For the action sulphuric acid on dead and living bone, I refer to Dr. George Pollock's experiment where he used a 1 to 4 solution.

1. Dead bone ..... 10 gr.
2. Diseased bone ..... 10 gr.
3. Healthy bone, middle age..... 10 gr.
4. Healthy bone, old age..... 10 gr.

Exposed to the action of sulphuric acid 1 part in 4 for three days at a temperature of 100° results as follows:

1. Dead bone. Phosphate of lime 2 grs. Carbonate of lime 3.30 gr. dissolved in the mixture.

2. Diseased bone. Phosphate of lime 2 gr. Carbonate of lime 1.3 gr. dissolved in the mixture.

3 and 4. In both specimens of healthy bone no action took place.

Methods of Using Amalgam.

By D. W. BARKER, M. D. S., Brooklyn, N. Y.

Read before the Georgia State Society at Lithia Springs, Ga., June, 1898.

The action and properties of amalgam have been the subject of much experiment of late years and much valuable knowledge has resulted therefrom; we do not hear so much about the "spheroidal tendency" as we used to, nowadays it is the "flow" and lately, "expansion" and "contraction." As yet the various steps of preparing and introducing the material into a cavity have not received much attention.

At the meeting of the New York State Dental Society, May, 1897, Prof. G. V. Black, who is popularly credited with a large experience gained in experiment in making and working amalgam, made two remarkable statements: one, that it made no difference what the treatment of amalgam was after annealing, it could not be made to do the same as before annealing; and the other, that he never washed amalgam[1]. Taken together, the inference is that Dr. Black is unaware of the effect that washing has upon amalgam, as similarly he was unaware of the effect of "aging" or as he now calls it "annealing" when he first published his "results" in 1895[2]. I merely mention this instance to show that in the pursuit of a perfect formula the details of manipulation have been overlooked. The manufacturer puts his amalgam upon the market without specific instructions as to its use, and the dentists, with what wisdom they may possess, proceed to work their will with it, with various results.

Method of Manipulating Amalgam

Years of careful working of this material has convinced me that a good filling is as much the result of proper manipulation as it is of a proper formula. Every operator has his own pet notions as to working amalgam, and every step in the process is capable of variety. It is not my purpose to dogmatically declare the only correct way, but I hope by grouping together the variations of manipulation to emphasize the need for more scientific methods. Let us for a few moments review some of these variations.

As to the mercury, some use "redistilled," which is supposed to be chemically pure, and others just "drug-store" mercury without supposing

1 N. Y. Transactions, 1897, pp. 105, 106.
2 N. Y. Transactions, 1897, p. 98.

anything about it. As to quantity, it varies from a mixture so dry that it will hardly pack, to that of one as soft as butter[3]. So far as I know there has been but two attempts to prescribe the exact proportion between this metal which makes about 50 per cent. of the weight of the filling, and the other metals, though some of the latter are computed to ½ of 1 per cent. The late R. S. Williams once placed an amalgam on the market put up in small slabs of wood in which holes were bored—in one hole a certain number of grains of alloy, and in another the requisite quantity of mercury; the other is an amalgam scale or balance which I have seen only in the hands of Dr. J. Foster Flagg and which so far as I know is not on the market, the arms of which are of unequal length, a given quantity of alloy in one pan being balanced by the proper quantity of mercury in the other, no weights being used.

Mixing. Some mix in the palm of the hand regardless of perspiration, dirt, etc., others triturate in a mortar, and one manufacturer recommends shaking the two together in a bottle.

Washing. Some do not believe in washing amalgam at all, thinking the "smut" thus removed has some desirable quality which should be retained, notwithstanding the fact that some amalgams are reduced in bulk nearly one-half by thorough washing. Of those who do wash it, some use diluted acid of one kind or another, some use alcohol, and some plain soap and water; moreover, some wash it when mixed with just the amount of mercury they wish to retain, others use a surplus of mercury to free the "smut" more thoroughly, afterwards expressing the surplus.

Pressing. Some use nothing but buckskin or chamois; others use muslin with the thumb and finger or the pliers; some do not squeeze amalgam at all, thinking the mercury carries away with it some of the metals in solution; some would not use the expressed mercury, others save it and use it again.

Packing. Some use round ball instruments with which the amalgam is burnished into the cavity, (Dr. Black to the contrary notwithstanding); others, a flat-faced instrument with which the filling is packed by direct, straight pressure, no burnishing being possible; some rub the filling into place with cotton or paper pellets held in the pliers; others lay a pad of paper over the amalgam and then *rub the paper;* others mallet it in very much as they would

[3] The former by a prominent New York dentist who declares his belief that "amalgam is the most unreliable filling material we have," and after hearing his method of using it, some of his hearers did not wonder that he thought so; the latter I saw in the hands of some college students who said they were instructed to use it that way by the demonstrator.

a gold filling; recently we have read of packing by means of a mallet weighing nearly three pounds[4]. Some insist on as thoroughly excluding moisture as for a gold filling; others are regardless of saliva or blood.

Finishing. In finishing a filling some use gold or tin foil to absorb the surplus mercury, while others wipe it off with paper or add a very dry pellet of amalgam. Some insist on dressing the filling when hard, polishing it with disks and strips, carefully trimming the margins, and removing any "feather," and others pay no attention to it after putting it in. Here are over thirty variations of method of simply preparing and putting the filling into place, to say nothing of the cavity, and I do not suppose I have exhausted the list by any means. Does it not seem as though amalgam is the most abused material we have? Is it possible for any material to be manipulated in such a variety of ways at every step of its use and yet give uniformly good results? It must be a remarkable material that would do so. What an evidence of the faith of the dental profession in amalgam as a tooth saver, that they put their trust in it all these varying conditions!

In some of these details no doubt there is not enough difference to appreciably affect the result, but in most of them there is.

Every one who attends a society meeting is ready to get up and tell "how he does it" and assure us he "gets good results," but that is not what we need; there can be but one right way. It is not my purpose to point out what that way is, but to show that our present way of "go as you please" is very unscientific, and that here is a large field for increase of knowledge of this material which today saves more teeth than any one other material, and also, that there are possible explanations of certain phenomena other than difference in formula.

What is needed then is long and careful experiment and record, and analysis of results, that we may bring order and system out of this chaos, and know that we are getting the best results possible.

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[4] N. J. Transactions, 1897, reported in ITEMS OF INTEREST, Jan., 1898, p. 30.

Dental Education.

By J. W. MANNING, D.D.S., Milledgeville, Ga.

Read before the Georgia State Society at Lithia Springs, Ga., June, 1898.

A great many papers have been read, and a great many discussions engaged in on the subject of dental education, which have at their close left the subject just where it was at the beginning, so far as anything practical was concerned—no movement set on foot having for its object the betterment of existing conditions.

The dental colleges, their methods of instruction, their requirements for admission and graduation have been "cussed," and discussed, repeatedly, with the result that most of them are getting on a higher plane. While it is true there is room for improvement in the standard of the graduates turned out by some of the colleges—some which seem to be in the *business* of teaching, instead of the *profession* of teaching, yet as a rule, now, the men turned out by the reputable colleges are very well qualified to practice dentistry. But there are two sides to the subject of dental education. The other side, and the one to which I wish to call your attention especially is the education of the masses.

Dental Education of the Public.

Every man, woman and child in all this broad land of ours needs a dental education. Not with a view to practicing dentistry, it is true, but they need it in the sense that every man needs to be a lawyer, not that he may be a practicing attorney, but that he may have a proper conception of the laws under which he lives and by which he is governed; or as every one needs to be a bookkeeper, not that every man shall give up everything else and stand from morning till night at a desk working on a set of books, but that he may be able to keep his business in proper condition. So I say, every one should have a dental education to the extent that he may have an intelligent understanding of their teeth and the importance of taking care of them.

Who have not had mothers bring their children to you with their molars badly decayed, possibly neglected until the pulps are exposed, and the little patients suffering from severe odontalgia, and when you have advised filling or the treatment of such a tooth, the mother says: "But, Doctor, she has not shed that tooth yet." The mother has allowed that tooth to go to ruin from no other reason than ignorance—lack of dental education. There could be named many other examples of this kind,

showing a lack of education among the mothers in the management of the children's teeth.

You have had young men and young women come to you with mouths looking more like places specially prepared for the propagation of bacteria than a place for the mastication of food. Yet, some of these same mouths belong to persons refined, and on general subjects well educated, but their education on the subject of dental hygiene has very evidently been sadly neglected. Again you have all had patients come to you with mouths filled with "snags," not a sound occluding tooth with which to masticate food in the mouth, and consequently such persons are great sufferers from indigestion and its attendant effects. If such patients only knew how much benefit might be derived from a good set of artificial teeth they would soon have them.

But we cannot hope to educate the older men and women on this important subject, nor can we hope to reach all the young men and women.

One solution of this problem is the education of the children in dental physiology and hygiene, and above everything teach them that the dentist is their friend, instead of their enemy. I long to see the time when the child will be anxious to go to the dentist, when anything is wrong with its teeth.

I believe that this can best be attained through the public schools. To get the best results from this source we must have our teachers fully understand the importance of the subject. This cannot be done in a better way than by bringing it to their attention in a special course in their high schools and colleges, and cannot be as well done by any one as by a dentist.

In the Georgia Normal and Industrial College, at Milledgeville, with its four hundred and fifty girls from more than one hundred counties in the State, a great many of them fitting themselves for the profession of teaching and going out to take charge of our common schools, in all parts of the State, we have, I believe, the very best field for beginning this work. I have talked with Dr. Chappell, the president, some of his teachers, and some of the board of trustees, as to the propriety of establishing a course of lectures in that school on the subject of dental physiology and hygiene. They are all heartily in favor of the idea.

Therefore, I would suggest that this society select a dentist and recommend him to the Board of Trustees of the Georgia Normal and Industrial College, to deliver a course of lectures on the subject of dental physiology and hygiene, in that institution.

The Use and Usefulness of Crystalloid Gold.

By R. Ottolengui, M.D.S., New York.

Read before the Georgia State Dental Society at Lithia Springs, Ga., June, 1898.

The dentists of a quarter of a century ago did some most admirable work, much of which is still in existence to prove the skill of these honored operators. These men worked without the advantages that are offered us today, and if they made their success under these circumstances, their results should be an incentive to the younger men entering the profession, and should inspire them with a determination to succeed in all cases which they undertake. To follow this rule will mean, however, to succeed in many cases which would not have been undertaken by the older operators, because the obstacles at that time were seemingly insurmountable.

I can very well remember when I first entered upon the practice of dentistry, that amalgam was much vaunted because, as it was claimed, hundreds of teeth could be filled with it and saved, which before had been consigned to the forceps; thus was inculcated a bad habit, from which the profession is still suffering. I allude to a tendency to use amalgam as an easy means of overcoming all difficult cases. It is a common thing for the dentist of today to tell his patient, "I cannot fill these teeth with gold because I cannot get the dam on, and it is necessary to keep the tooth absolutely dry when I use gold."

Now, if such a man would adopt the rule of keeping teeth dry even when using amalgam, he would soon acquire a skill in placing the dam, which would prove to him that many teeth can be kept dry in this manner, where he now thinks that it is impossible.

Similarly, a very large proportion of the teeth now filled with amalgam, because they are too difficult, could be much better filled with gold, or with gold in combination with other materials. And, it is the wise use of all materials at our disposal, which makes a man more serviceable to his practice than were he to depend upon one or two filling materials only.

The manufacturers of crystal golds tell us that a tooth can be filled with their products, as well as with any other style of cohesive gold. This is a claim which, I believe, cannot be substantiated by the most skilful operator with any kind of crystal gold, whether it be one of the older materials, or one of the much advertised recently introduced styles.

It is true that in certain contingencies, crystal gold is more easily manipulated than pellets made of cohesive foil. This is a quality which gives the crystal an important place, and which largely explains its usefulness, but, at the same time, it is likewise a characteristic which accounts for many of the failures which occur at the hands of those who have undertaken to make exclusive use of any of the crystal golds.

The fact is that if a thing is easy, it not infrequently engenders unskilful manipulation. This is especially true of the crystals, which, being easily worked, are sometimes introduced in such large pieces that they cannot be thoroughly condensed nor properly packed against the walls and margins.

To those, then, who would like to add a crystal gold to their armamentarium, two things are requisite; first, the operator should learn how to use this style of gold; and, secondly, he should have discrimination to tell when and where to use it.

Occlusal Cavities in Molars.

There is one place where crystal gold should never be allowed to come to the surface, and that is in cavities occupying the masticating portions of teeth. Let us for a moment, however, consider the demands made upon a filling in this position. Here, more than elsewhere, the forces of mastication produce a constant hammering upon the gold which, in its hardest form, is nevertheless a soft metal. Experience has shown that fillings of cohesive foil, properly packed, can be made so dense that they offer sufficient resistance to these forces, and even after many years of use, show a hard, well polished surface. Anything less than this comes back rough and pitted, and as I do not believe that crystal gold in any form can be packed sufficiently hard to endure in the occlusal surfaces, I consider that in such cases it is contra-indicated; nevertheless, it is in exactly the large occlusal cavities in molars, where crystalloid gold will prove most useful, provided that it is properly packed and used with a comprehension of its limitations.

If we could imagine that a cavity were shaped with parallel sides from bottom to margin, as, for example, like a cup or tumbler, it would manifestly be folly to say that crystalloid gold could be used for two-thirds of the cavity, and that a well condensed cohesive gold used for the upper third, could produce a filling as perfect as though cohesive gold had been used throughout, since we have admitted that no crystal gold can be made as hard as the cohesive foils. The result of such an arrangement would be that the constant hammering of mastication upon the exposed surfaces would produce a gradual but certain condensation of the underlying stratum of softer crystal gold, with the final consequence that the filling would sink, becoming concave at the center and inviting imperfections along the margins.

But, as a rule, we do not prepare cavities in molars in any such fashion. A section through these cavities shows us a shape somewhat similar to a section through an hour-glass supposing that the upper half of one bulb of the hour-glass were removed. In other words, we treat occlusal cavities in molars differently from those in approximal surfaces. In the latter we build our gold flush with the margin and then stop, but in masticating surfaces of molars and bicuspids, it is common practice to continue our filling beyond the true margin, extending it considerably over and upon the enamel.

If crystalloid gold be used to fill all of the cavity up to the true margin, and cohesive foil, preferably of rolled gold No. 30, be used for the overbuilding, it is evident, if the shape of the filling be viewed in cross section, that the upper portion of the filling is so placed that a good proportion of it rests against the beveled enamel, and consequently very little of the forces of mastication are transmitted through it to the softer gold below. Under these circumstances, even though we admit that crystalloid gold will not make a filling as dense as cohesive gold, nevertheless, it is dense enough even for cavities of considerable magnitude in masticating surfaces, provided the upper third of the filling is made of a cohesive foil.

Before speaking further of positions in which crystalloid gold becomes serviceable, it may be well to refer briefly to the methods of manipulation required for its successful use.

Methods of Using Crystalloid Gold.

It must be remembered always, in handling this material, that it is quite the opposite from a cohesive gold pellet. If we place a pellet of cohesive gold at the mouth of a cavity and then force it in with a plugger, what results? That portion of the gold upon which the plugger rests is driven forward into the cavity, while the surrounding mass doubles on itself, thus becoming partly condensed before it is carried to position. If a piece of crystalloid gold were similarly placed, too large to readily pass the opening into the cavity, the plugger point would carry forward only that portion of the gold upon which it rests, making a hole through the sheet of gold, but not condensing any except that which it drives into place.

This immediately teaches two things. First, that one very valuable characteristic of crystalloid gold is, that *no condensation occurs until the plugger has carried the gold actually to the place where it is desired that it should be*, and, secondly, that the best results in using this material, can only be obtained by using the crystalloid cut up in pieces small enough to be easily placed into the cavity, thus avoiding the tearing which would

otherwise result, and it is only by this precaution that crystalloid can be used without waste.

It is only fair to say in favor of crystalloid gold, that any men who might report that a great deal of waste occurs with its use, by such report admit themselves to be unskilful or else ignorant of the proper method of manipulation.

Because of the above described characteristic of crystalloid, it is wise not to attempt much condensation until the whole piece in use is laid flat against the gold already packed.

While crystalloid can be used by the skilful or dexterous operator in connection with any kind of mallet, it would be well at the outset for the dentist to first partially condense each piece with hand pressure, using the mallet afterward. This does not mean that every piece must be partly condensed by hand and then with the mallet. In large cavities especially, much time will be saved by covering the floor and perhaps building against the walls by hand pressure, after which the mallet may be used to more thoroughly condense all that has been placed. Then, a succeeding layer of several pieces may be placed in position before the mallet is used again. Subsequently, when using cohesive foil for the final third of the cavity, the procedure will be with the mallet exclusively, as in any ordinary case.

Crystalloid gold will never rock, and consequently it may be used, if properly manipulated, in cavities having a generally retentive shape without resorting to the ever-dangerous retaining pit. In such cases the gold may be used in pieces as large as will pass the entrance to the cavity, and each piece is to be condensed very slightly, if at all, until a considerable mass shall have been placed in the cavity, enough to touch all the walls; then by carefully condensing in the center, the gold spreads laterally and without any of that annoying rocking so often met when using pellets of cohesive foil, one-half of the filling can be quickly placed and will be immovable in its position. It is seldom requisite even to resort to the common method of holding the gold in place with one instrument, while additional pieces are inserted with another.

As to the usefulness of crystalloid gold, I may refer to those places where it is especially serviceable by saving time.

Where Crystalloid Is Most Serviceable.

First, then, crystalloid is serviceable in all very large cavities, and especially in compound cavities, including approximal and crown surfaces where a matrix is used. I know of no form of gold which can be manipulated to better advantage against a matrix. As has been already explained, in these large cavities the upper third of the filling is to be made with cohesive foil. I have said that crystalloid should be used

in small pieces, but, of course, I mean small in proportion to the size of the cavity; consequently, in large cavities, quite large pieces may be used, and it is in this class of cavities that a considerable portion of the first stages of the filling may be rapidly accomplished by hand pressure, using fairly large points. The floor being covered in this manner, the mallet may then be relied upon for further condensation.

The second place where crystalloid gold is especially serviceable is exactly the opposite, namely, all very minute or inaccessible cavities. Here, it is seen at once, that no extreme density is required; consequently crystalloid may be used throughout without fear of future failure. In these places crystalloid should be cut in very narrow strips, and again into smaller pieces, tiny in proportion to the minuteness of the cavity. In introducing the first few pieces, use as large a plugger as will readily enter the cavity, but having well started the filling, smaller points would be more advantageous for completing it.

It is a wise rule, which should have a general application, that no tooth which is still sore from wedging should be filled, until it has had sufficient rest to recover; nevertheless, circumstances will arise where we will be compelled, even against our better judgment, to fill such teeth. We all know how much pain the mallet produces in such circumstances; moreover, the mallet produces an increasing degree of pain with the too common result that, in the effort to spare the patient, the final portion of the filling is not sufficiently condensed, the operator using lighter blows as the tears trickle down from the corners of the patient's eyes. If such teeth must be filled, there being no time in which to allow them to recover, crystalloid gold packed by hand pressure is indicated, only the very outermost surface being covered with cohesive foil and condensed with the mallet. In this fashion, under these unpropitious circumstances, a good result may be obtained with little pain to the patient.

Many cases arise where the dentist may desire to introduce some non-conducting material between his filling and a closely approached pulp. A practice common among good operators is to use a fair proportion of one of the phosphate cements, and, before this hardens, to place two or three pellets of cohesive foil into the cement. When the cement is thoroughly hardened, the filling is continued with cohesive foil. This is much easier to write about than it is to do. The main difficulty in the procedure arises from the fact that the cement oozes up between the pellets of cohesive gold, and when we come to continue the filling dust from this gets on the gold, and interferes with cohesion. I have had much satisfaction in employing the crystalloid gold in these places.

My method has been to cut from a sheet of crystalloid gold a piece

about the size and shape of the cavity. The cement is carefully smeared over the bottom of the cavity, and the one piece of crystalloid is as carefully put in position serving as a cover over the cement. When the cement is hard we have the cavity practically with a perfectly smooth gold floor. The filling may be continued with crystalloid or with cohesive gold, as the operator may elect.

Crystalloid Gold Combined with Amalgam.

In compound cavities, it has been recommended in some instances to use amalgam for that portion occupying the approximal surfaces, especially toward the cervical margins. Common practice is to allow the amalgam to harden, and to complete the filling with gold at a subsequent sitting. Some men, however, have claimed that the gold may be packed upon the fresh amalgam without waiting. By experimenting with this method, the dentist will find that it is not as easy as its advocates would lead us to imagine. I had never been able to make a success of it until I undertook it with crystalloid gold, and with this material I find that if the amalgam in the approximal surface is brought to a level with the floor of the cavity in the crown, the gold may be placed without waiting for the amalgam to set, by using the following method:

We are supposing that the matrix is in position. The amalgam, as stated, has been built up to the level indicated. Next, cut two pieces of crystalloid gold large enough and of proper shape to cover the floor of the cavity, and also to cover the exposed surface of the amalgam. One of these pieces is carefully introduced and gently pressed into position against the amalgam; the second piece is similarly placed and further condensation obtained. Then continue the filling from the point furthest away from the amalgam, keeping the floor as level as possible, and lapping piece after piece smoothly over that part which overlies the amalgam. In a very brief time, and with very little difficulty, a complete gold floor will be obtained, and the filling may be finished with cohesive foil and the mallet.

In conclusion, I would like to have it understood, that I am not advocating the indiscriminate use of crystalloid gold, nor of any other crystal; but, while it is true that cohesive foil is more dense than any crystal can be made, nevertheless, I believe that every dentist should include a crystal gold in his list of filling materials, and that he should have the wisdom and skill to use it in all places where its peculiar qualities will save time for himself and patient.

Conservation of the Dental Pulp.

By F. O. Robinson, Class of '99.
Read before the Students' Dental Club of the Louisville College of Dentistry.

Equally desirable with an ideal filling material, and equally welcomed by the dental profession, would be the introduction of a method, successful even in a fair majority of cases, for the conservative treatment of the dental pulp.

That the present indiscriminate slaughter of the innocents, with its too frequent concomitants of dental abscess and final extraction, seems rather a crude expression of the higher dental art will be readily conceded.

That the profession needs some efficient and more benign means, whereby these pulps may be allowed to fulfil their intended destiny of carrying to the teeth the much needed nourishment for their vitality and permanence, is too apparent for discussion. But of the many methods introduced during the past years for the treatment and capping of pulps only the most ardent of their friends will claim for them a large measure of success, even when applied by skilful operators and under favorable circumstances.

In a general way there are three main classes of exposures presented to the dentist.

First. Accidental exposures during an operation when the pulp will have suffered no irritation and will be found in a healthy, normal condition, showing a clear, pink color.

Second. Those in which the pulp is partially denuded by the encroachment of caries; or where exposure is rendered necessary by the pulp being but thinly covered by a layer of partially decalcified and badly infected dentine which must be removed. In this class of cases the pulp will be found more or less irritated, of a cherry red color, hyperemic, hyperesthetic, abnormally sensitive to cold; pain, usually severest in the evening and of a reflected character, in the region of the eye, ear or the other maxilla.

Third. Of the third class we need say but little, because the pulp, owing to the increased extent and duration of exposure has passed beyond the period of local irritation and may be found in the stage either of congestion, general

inflammation or active suppuration. Accompanying this will be severe localized pain, greatest during the early hours of the day, soreness upon percussion, and painful response on application of heat.

Of these three general classes the first will, and the second should usually, respond favorably to conservative treatment and capping: provided always, the patient's general health be unaffected (especially by malaria), and possessing active recuperative powers. Regarding this Dr. Chisholm writes: "I would not attempt to save an exposed pulp in Alabama in the months of May, June, July or August, or when there was malaria present. The chance is so hopeless it is better to destroy it."

The third class of cases, those in a state of congestion or suppuration, would, at least in a great majority of instances, indicate the use of a devitalizing agent.

Method of Capping Pulps.

With these three general classes of cases with the accompanying conditions clearly in mind, the succeeding steps of preparation, treatment and capping should become more secure and intelligent. When, owing to the presence of any of the conditions named above an exposure is apparent or to be feared, the rubber dam should be applied before the operation begins to prevent possible infection of the pulp from the fluids of the mouth. The next step is the removal of the carious matter. Of this Dr. Jack says: "In the removal of caries the excavation should be first carried on at the sides of the cavity, and also along the margin of the cervical wall in approximal cases. Then the carious matter should be carefully peeled off without pressure and without irritation. In this manner a pulp may be uncovered and the cavity cleansed of carious matter without contact being made with the pulp. To do this is the acme of skilful preparation."

While a thin layer of partially decalcified dentine may, at times, be allowed to remain as protection to the pulp, providing it be thoroughly disinfected, yet the operator should not hesitate to enlarge a recent exposure in the removal of all badly infected dentine.

Of the two classes of cavities amenable to treatment and capping, those due to accident and those affected by caries but in which the pulp has suffered but slight irritation, one description of treatment will suffice.

First, wash out the cavity with tepid water. Relieve the pain if any is present by applying tincture of calendula in strength of one part to four of water. To destroy any micro-organisms that may have invaded the zone of dentine immediately underlying the carious matter, Dr. Jack uses one of the following:

Hydronapthol in strength of 1 to 300 parts of water,

Acetanilid in strength of 1 to 200 parts of water, or

Formalin in strength of 3 to 100 parts of water, to be applied for eight to twelve minutes on a pledget of cotton.

Methods of Capping Exposed Pulps.

Many methods and materials have been suggested and employed by different operators in the final operation of capping. Some lay over the exposed point a disk of paper, asbestos or oiled silk rendered antiseptic in various ways. Others flow over the part a thin paste of oxysulfate of zinc. Dr. White of Nashville, uses a paper cap sterilized in chloroform. Upon this he places a small quantity of a thin paste of chloro-percha with aristol. This plaster he presses gently over the point of exposure, evaporates the chloroform with a few blasts of warm air and completes the operation by filling with cement. Dr. Lee, of Alleghany, Pa., first saturates the cavity with pure beech-wood creasote as a disinfectant; wipes cavity dry and applies iodoform. He then paints the cavity with copal-ether-varnish, one or more coats, until the tooth is not sensitive to cold air. If exposure is large he places over it a disk of asbestos paper, pressing it down gently into varnish before it hardens, again varnishing over this and drying thoroughly. He then completes the operation by filling with thin paste of oxiphosphate.

Of the metal caps those of platinum or of pure tin are recommended as being resistant to pressure and non-conducting. In using these caps Dr. Jack fills the concavity of the disk with a thin paste of oxide of zinc mixed with equal parts of carbolic acid and oil of cloves. This dressing is supposed to be mildly antiseptic and anesthetic in its action on the pulp, while the gradual dissipation of the menstruum renders it firm in character. Before applying the cap he touches the point of exposure with lint saturated with carbolic acid and oil of cloves equal parts. The effect is antiseptic, anesthetic and superficially coagulant. The cap is now placed in position over the exposure, using extreme care to bring the dressing in direct apposition with the pulp, at the same time avoiding compression as the pulp is extremely responsive to pressure. Over the cap, if the prognosis is favorable, a metal filling may be inserted, but it is deemed safer practice to fill temporarily with a non-conducting cement which can be replaced later by a metal filling if the operation gives promise of permanent success.

If, after capping, the pulp can be kept in a quiescent state for a few months, a reasonable hope may be entertained that it has resumed its normal functions and its future vitality is assured. Irritation may occur, however, accompanied with the usual diagnostic symptoms of reflected, intermittent pain, abnormal sensitiveness to cold, etc. Dr. Jack recommends treating this with tincture of aconite root, two parts, and chloro-

form, one part, applied over the root of the tooth. Dr. Cottell relates an instance of successfully reducing irritation of this nature by applying leeches to the gum over the tooth, thus withdrawing blood from the part. Three years later, he examined the tooth and found the pulp alive, responding normally to the usual tests.

As to formagen, I can hardly do more than express my regrets at being able to say so little of this agent in which we are all deeply interested. That it will supply the highest desideratum in conservative pulp treatment many are sanguine enough to believe. We do know that its first effects when applied to exposed pulps are highly salutary. For the final results we can only hope for the best and in the meantime possess our souls in patience.

Formagen is a cement formed by a powder of "Todine salts" mixed with a liquid consisting of eugenol, lysol and carbolic acid. Into both powder and liquid, while separate, is introduced the freshly formed gas, formaldehyde. Formagen is claimed to possess germicidal properties even after hardening. It was invented and brought to its present degree of perfection by Dr. Abraham Konitz, of Berlin. It was first used in this country by Dr. Otto Bickel, of New York, about eighteen months ago. He reports having used it on a number of exposures in varying degrees of irritation, one being a case of acute pulpitis, and, as yet, without a single failure having come to his knowledge. Of formagen, its inventor writes: "To the carbolic acid is due the quick arrest of the pain, while the 'Todine salts' and formaldehyde at once neutralize the pus forming bacteria. The 'Todine salts' in addition to drying up secretions exercises a beneficial effect on granulation without irritating the pulp." In another article he sums up as follows: "It is daily asked in what manner formagen acts upon the teeth. To this question there cannot yet be any definite answer, but the theory, so far as it has been determined is as follows: The pulps covered with formagen are influenced first by eugenol and also by the carbolic acid contained in the fluid which thus deadens the pain, and during the action of the eugenol the formaldehyde passes gradually out of the formagen and penetrates into the pulp and changes the same in a small region around the exposed place. The developing gases and fluid from the pulp chamber are absorbed by the porous putty and from the effect of the formaldehyde the pulp becomes hard and tough, the parts of the pulp not affected, meanwhile, act normally, and from this fact and from the action of the formaldehyde upon the pulp it becomes for the first days after application of formagen, inactive, but in a few weeks is restored to its normal functions."

New Jersey State Dental Society.

Discussion of Dr. Chase's Paper.

Dr. Morgan Howe. The excellent paper to which we have listened suggests to my mind what has been suggested before in listening to dental literature,—the tendency that evidently exists among dentists to reach out into general practice. They are evidently recognizing, in practice if not yet in theory, that dentistry is really a special branch of medicine, and I think there will be, if there is not already a growing conviction that the dentist of the future must be a medically educated man.

The reference of the essayist to the administration of certain remedies confirms what has been discussed in recent Society meetings a number of times, that dentists are more and more looking and practicing that way.

In particular the only reference that I would make to the points of the paper is that my experience seems to go contrary to the statement of the essayist in the particular of the relative frequency of necrosis in the upper and lower jaws. However theoretically it may be explained, I have had many cases of necrosis connected with the teeth to treat in the upper jaw, and I do not now remember that I ever had a case in the lower jaw. I do not know that this is a contradiction of the statement which the essayist makes, but it points in the opposite direction.

Dr. Osmun. I have not very much to say, Mr. President, in reference to the paper except in the way of commendation. I believe the treatment laid down is the universally followed practice, except that, perhaps, I might criticise the systemic and medical treatment, and advocate a little more surgical interference. I believe when we have necrosis that is well defined, surgical interference is very advantageous. I would rather discuss what Dr. Howe said, a little more than the paper. He said he thought that we as

dentists, and the dental profession, are branching out in systemic treatment, and that this is an indication that we are to be a specialty of medicine, and that the coming dentist would need to be educated medically. I thoroughly believe that the coming dentist must have a medical education, and unless a dentist has a medical education he cannot become a specialist in medicine. I lay that down as a fundamental principle. If he has been educated in a dental college, has a dental diploma, and is a practicing dentist, he practices dentistry as a member of the dental profession, which is just as honorable as any other profession under God's heaven, just as worthy of all respect, but he cannot be, logically, a specialist in medicine, because he has not the medical education and diploma. I say this with no disparagement whatever to the dental profession. Any man, no matter what calling or avocation he follows, as long as he follows it honestly and gives to it his very best efforts and all that he has within him to benefit humanity and fulfils the duty imposed upon him, is worthy of all praise, be the name of the profession what it may. But I am opposed to this wearing of jackdaw feathers to decorate ourselves in; we are not medical men, we cannot be medical men unless we have received the degree of M.D. from a medical college, and we have no right whatever to interfere in the domain of the medical man. God knows we have enough work. The harvest is white and the laborers are few, and the man who does his duty faithfully is worthy of any monument the human family can give unto him. (Applause.)

Dr. Sutphen. The treatment advocated is practically the same as I employ, and that is about all I can say on that question. I cannot differ from the essayist at all, so I simply state my agreement. Yet I must say again, as I said yesterday, that I do take issue with the gentleman who has just spoken on the same ground that I took issue yesterday; I do not consider we are interfering with the medical profession at all, when we prescribe remedies which are directly for the teeth and mouth.

Dr. Osmun. Allow me to correct an impression, if I have given it in anything I have said, that a dentist has no right to prescribe remedies for dental lesions. But dental lesions and systemic treatment are two different things entirely. Locally and within prescribed limits, the dentist has the right, and no one questions it, to so prescribe. There is a line of demarcation, however, which is well defined in my own mind, which he ought not to trespass over.

Dr. Chase. In reference to the treatment, and in reference to necrosis, it is frequently the case that we find necrosis in the superior maxilla. I did not say that we

do not, but the chances are very much against finding it there, while you will find it in the lower jaw, as we all know that the circulation in the lower jaw comes through the inferior dental canal at the back of the jaw and goes out at the chin, while in the upper jaw the circulation is much greater. As far as operative means are concerned, it frequently happens that we must operate. In reference to dentistry being a specialty of medicine, I do not care anything about that. I do not even care to discuss it; if a dentist takes care of the lesions in the mouth that come to him he will have about all he can attend to, and if he meets with a lesion in the mouth that comes under his specialty, and in his opinion it is necessary for that patient to have systemic treatment, it is his duty, according to authorities which I have consulted and which I spoke of yesterday, to treat that patient accordingly; one high in authority told me if a dentist did not do that he would be liable. I do not know if that is so; we have had no decision from any court on the subject and not until such a decision is rendered by a competent court shall we know to what extent dentists can go in prescribing remedies internally or otherwise, for his patients. But we have the privilege, which is not denied us, of administering anesthetics, and that we all know is one of the most dangerous methods of administering medicine. There is nothing said against that, but if we prescribe a few remedies for the patient to take through the alimentary canal a hue and cry goes up about it, and we are told that we are encroaching upon the domain of the physician. I myself do not intend to encroach upon the domain of any physician; I want to go hand in hand with medical men as brethren, not as rivals. Nor do I regard a physician as my leader. I consider myself the equal of a physician. As practitioners of dentistry it behooves us to get all the possible information we can. As I have said in my paper I recommend certain things in cases of systemic trouble or similar difficulties. If, however, a patient came to me suffering from rheumatism I would send him to his own physician. A short time ago a patient came to me suffering from neuralgia; he insisted it was from a tooth; I said it was not. He still insisted and I prescribed a large dose of citrate of magnesia and gave him Dover powders and told him to go away and in twenty-four hours he would be all right. He did as I directed and recovered. Some time afterwards he came again and said, "I have another of those colds." I said, "I cannot treat you now; you have a cold; before you had a dental lesion and I treated you."

Dr. C. S. Stockton. Mr. President, I was not present when the paper was read, but I have heard part of the discussion and I think I know what the substance of it was and with your permission I have something I should like to say on the subject.

I must confess I was somewhat surprised to learn that the harvest is white and the laborers are few; possibly a great many others here were surprised at that statement. I think the harvest is black and the laborers are not few; the woods are full of them! They are turning them out from these dental halls by the thousands to reap and gather in this harvest. There are so many of them that prices are cut in order that those laborers may enter the field and have something to do. Almost they are called in as they were at the wedding feast without regard to who they are or where they come from. So I take it that you all, with me, recognize the fact that the statement was a peculiar one, at least.

Also it seems to me a very strange thing that gentlemen should take upon themselves the name of "Doctor" and frequently are called upon in consultation with physicians to administer, as the gentleman last upon the floor stated, anesthetics, one of the most dangerous administrations that can possibly be handled by an M.D. or a D.D.S., and to say that in spite of this they are not qualified to give medicine which they know will be a benefit! Take a case of necrosis; it may be that the patient is run down from that disease to such an extent that it is absolutely necessary that the system should receive treatment and be built up, and to say that because we simply pull teeth, fill or insert them, we are not fit to administer systemic treatment in such cases seems to be almost nonsense. If a man is not fit to be a dentist and administer systemic treatment he might better give up filling teeth, or inserting them, and go to selling peanuts on the corner.

Dr. Howe spoke in regard to necrosis of the lower jaw being rare. What he said may be true in his experience, but one of the worst cases I ever saw of necrosis of any kind was that of the lower jaw.

On motion of Dr. Watkins he was granted the floor and presented the report of the Committee on Dental Prophylaxis.

On motion of Dr. Brown the report was received and referred to a committee. A discussion was then about to ensue when Dr. Brown raised the point that discussion was not in order, the report having been referred to a committee. Dr. Iredell maintained that discussion could not be objectionable, and discussion was permitted.

Discussion of Report of Committee on Dental Prophylaxis.

Dr. F. G. Maynard. I consider this one of the most important subjects we have, and I only wish the report had gone back farther and had covered the care of the tem-

porary teeth and even recommended the proper diet for children when the teeth are young. It is surprising to see the lack of care of temporary teeth and the ignorance that is exhibited by parents in regard to their importance. I consider them more important than the permanent teeth, for the simple reason that while the temporary teeth are coming the foundation is laid for all the future disease and future health, and it is specially at that time particular attention should be paid to them, for if you do not give a child a good physique and good health you cannot expect good teeth afterwards. It is surprising to see every day how little people think of the importance of temporary teeth; you can go past our soda fountains and see children of two, three or four years of age being given soda water, one of the greatest curses to the teeth. Any physician will tell you that there is nothing that will derange the stomach more than soda water. Perhaps the soda fountain men will not thank me for saying that, but at the same time it is a fact. It is surprising to see how little attention is paid to giving children food which will properly bring lime into the system. I believe it is the duty of the dentist to instruct his patients who are parents in regard to these things. I hope to see the day when this subject will be taken into our public schools for the simple reason that we cannot now reach these cases until it is too late, and I hope to see the time when the importance of having the temporary teeth attended to, and proper diet afforded children when the teeth are coming in, and instruction as to the proper method of cleaning them intelligently, will be taken into our public schools as part of their education.

Dr. Bogue. As I listened to the report it occurred to me that it is very regrettable that all this list of new remedies or combinations was not present at the time of the creation of man! They seem to be so essential to his welfare and especially the welfare of his teeth. I am now referring to the latter part of the paper.

In regard to the first part it does seem as though we, as caretakers of a part of the human body should regard prophylaxis as far as possible. It does not seem always to enter into the calculations of the dental practitioner that the constitution of permanent teeth is settled in the early years. We have all seen old people apparently on the borders of the grave with excellent teeth, requiring nothing at our hands and I presume we have all seen young men whose teeth were so soft that you could whittle them with a penknife; and there is a reason for that. The constitution of these permanent teeth is laid while the children are in pinafores, perhaps sooner than that even and prophylaxis presents a general difficulty which can never be overcome. In regard to pre-natal remedies, I have seen a number of children whose teeth were or were not cared for anterior

to their birth. The first child whose teeth were thus cared for had splendid teeth; the second child whose teeth were not cared for had bad teeth; the third child whose teeth were regarded, had good teeth, and the fourth child died so you could not tell whether they were good or bad.

Another thing you must remember; twenty-eight teeth, properly and naturally arranged in the human jaws admit of a triturating motion of their surfaces which assist greatly in mastication. The loss of one little bicuspid from these twenty-eight teeth will disturb the triturating motion to such an extent that unless the cusps are thoroughly worn good trituration can never again take place. I said the loss of one little tooth and I meant the loss, either by extraction, by filling, by chiselling or a failure to erupt. You may ask how I know; I have made experiments on living subjects, and I have a good many hundred of them, and I am satisfied that we as professional men are not careful to preserve the arches of the human teeth in their integrity. We do not seem to recognize that, in their integrity, those human teeth are self-cleaning to a very great extent. I have seen a man fifty-six years of age who told me he never had had a brush in his mouth, never brushed his teeth at all; you would naturally expect to find a filthy mouth, but, on the contrary, it was clean and sweet and the gums free from any foreign substances; he had lost but one tooth and that was a wisdom tooth and he had never had a dentist do anything but once.

We need, if I am permitted to say this with some emphasis to study ideal teeth; you find them in the museums! As a rule we see defective teeth; it is rare that we see a perfect set of teeth, perfectly adjusted or as perfectly as might be hoped for, and it does seem to me that less dependence upon remedies and a greater dependence upon the systemic material, which we may control to a great extent if we begin early enough, will be of more substantial aid to our profession.

Special Meeting.

A special meeting of the New Jersey State Dental Society was held at Newark, N. J., Saturday evening, September 24, 1898.

The President. Gentlemen, you understand why this meeting has been called. In the ITEMS OF INTEREST, September issue, appeared an advertisement of the Dentacura Company, in which they claim that by the courtesy of the proprietors of ITEMS OF INTEREST, they have appropriated part of the proceedings of the New Jersey State Dental Society, namely, the report of the

Committee on Prophylaxis, and used it as part of their advertisement, thus trying to make the New Jersey Society sponsors for their productions. The Executive Committee met and went over the ground very carefully, and having ascertained certain facts in reference to it, they thought it best to call a meeting of the Society to take action thereon. They also engaged counsel, Mr. Halsey M. Barrett, who is present with us tonight and will give you an opinion as to the legal status of the question. We have called this meeting to authorize the procurement of an injunction restraining the Dentacura Company from issuing certain pamphlets which they now have in print, in which they are trying to take our proceedings and use them for their own special benefit, and, as far as our information goes, they procured those minutes of our meeting in an illegal form.

Dr. Brown. I move that Mr. Halsey M. Barrett, be retained as counsel for the New Jersey State Dental Society in any matters we may have on hand of a legal nature.

(The above motion was unanimously adopted.)

Mr. Barrett. I will read the opinion which I prepared at Dr. Osmun's request and which was presented at the meeting of the Executive Committee and other members of the Society, at his house on Wednesday evening. It is dated September 21, and is addressed to Dr. Osmun as President of The New Jersey State Dental Society, and is as follows:

"Dear Sir: In compliance with your request, I have examined the matter relating to the legal right of the New Jersey State Dental Society to restrain the publication by the proprietors of Dentacura of all or any part of the report made to the Society by the special committee of which Dr. S. C. G. Watkins was chairman, which report related to the subject of dentifrices, etc.

"I understand the facts to be as follows:

"FIRST: The New Jersey State Dental Society is an incorporated society.

SECOND: The New Jersey State Dental Society in July, 1897, appointed a committee to investigate the subject of dentifrices, etc., and to report at the next annual meeting, the result of their investigation. Dr. S. C. G. Watkins was chairman of the committee.

"THIRD: The chairman of the committee presented its report at the meeting of July, 1898, signed by all the members.

"FOURTH: The report was read and discussed, and (Dr. G. C. Brown claims) was referred to a committee of three for further consideration. This special committee was not appointed by the president and no official action in the nature of acceptance or approval was taken by the Society.

"FIFTH: This report, after having been read, was the property of the Society, and should have been retained by the secretary of the Society.

"SIXTH: In some manner its contents were disclosed to proprietors of Dentacura, whose preparation was strongly approved in the report, and they have published some or parts of the report as an advertisement in ITEMS OF INTEREST for September, 1898.

"The question presented to me is: Can the New Jersey State Dental Society restrain or prevent the proprietors of Dentacura from publishing in any form, advertisement or otherwise, the report of the special committee above referred to.

"Upon this state of facts I am of the opinion that such publication can be restrained by injunction and that the State courts of New Jersey have jurisdiction in the matter.

"A report made to the duly organized society by its special committee and pursuant to its instructions, upon being presented to such society, becomes at once the exclusive property of the society. The committee have no property right in it, having acted merely in a representative capacity for the benefit of and under the direction of the society.

"Such a report is what is termed in law 'literary property' and the property right of the society in such report is similar to the property right of an author in his unpublished manuscript; and an unauthorized publication of the same will be restrained by injunction.

"There are numerous decisions affirming this proposition so far as relates to the property right of an author in his unpublished manuscripts, and although I have been unable to find any decision relating to the property right of a society in a report made to it by its committee, the analogy is so close and the interests involved so nearly identical, that I am of the opinion that the same rule would prevail in the latter case.

"The authorities on this subject are grouped and the subject is treated in Story's Equity Jurisprudence, Section 943, and Pomeroy's Equity Jurisprudence, Section 1653, as well as in the Encyclopedia of Law under the title of 'Literary property,' volume 13, page 919; and also under the title of 'Injunctions,' volume 10, page 928; and these authorities sustain the principle which I have stated above.

"With respect to the methods by which such report was secured for publication, that is not a question of law, but upon investigation might prove to be a matter of discipline on the part of the society over such of its members or officers as permitted this report or its contents to come to the knowledge of the proprietors of Dentacura.

"The publication referred to as an advertisement in ITEMS OF INTEREST for September, 1898, expressly states that such report is obtained through the courtesy of ITEMS OF INTEREST, and if there has been a breach of faith by the proprietors of that publication, in divulging the contents of this report, that will be another question to be dealt with separately.

"It is possible that upon a demand being made upon the proprietors of this magazine and also upon the proprietors of Dentacura, to discontinue such advertisement, they would accede to this demand; and the question whether the State society wishes to have proceedings taken to restrain such publication, is one for its executive committee and officers to determine."

I will state, in addition to this that from Dr. Ottolengui's statement to the president and members of the society present at that meeting and from the letter which Dr. Ottolengui received from Mr. Lathrop, the vice-president of the Dentacura Company, and which he furnished to me, it appeared that the Dentacura Company not only purposed to avail themselves of such publicity as they have already obtained by their advertisement but that they also purposed to have about one hundred and twenty-five thousand copies of that report, or that part of it which relates to the Dentacura preparation, printed and circulated among the dental profession throughout the United States, and also among the public generally.

Dr. Ottolengui it seems learned from Mr. Lathrop either by correspondence or an interview, that it was purposed to issue, publish and distribute this large number of copies of a portion of this report, and he protested, as I remember his statement, in the interview, against that as being entirely unauthorized and a violation of the property rights of the State society in its report and an infringement of the rights of the members of the committee, as it was purposed to publish that circular over fac-similes of the signatures of the five gentlemen composing the committee who signed the report. In answer to that protest Mr. Lathrop sent Dr. Ottolengui a letter on September 15, in which he expressly declared that they intended to proceed and distribute those circulars. That letter I have and wish to retain in case of proceedings being taken, but if it is thought best to have it read, the secretary can read it.

(On motion of Dr. Adams the letter was read.)

Dr. Brown. We have heard the report of the counsel and we have also heard this letter of Mr. Lathrop, both of which have a certain bearing and still have, the letter particularly, nothing to do with the subject in point. I think now the proper thing to do would be to hear from the stenographer as to the correct disposition of the original report. We want to know where that report belongs; was it placed in the hands of a committee according to my motion to refer it as suggested in the report, or was it not. I would call for the reading of the stenographer's minutes of the society meeting at Asbury Park in regard to that matter.

(The above motion being put to a vote was carried).

The stenographer then read from the original notes taken at the meeting at Asbury Park in July last, as follows:

"On motion of Dr. Watkins he was granted the privilege of the floor.

"Dr. Watkins then presented the report of the committee on dental prophylaxis.

"On motion of Dr. Brown the paper was received and referred to a committee.

"The President: This report is open for discussion.

"Dr. Brown: But it has been referred to a committee.

"Dr. Iredell: There seems to be a disposition to discuss this paper and there can be no harm in discussing it.

"Discussion on report."

Dr. Brown. I now rise to a point as to the disposition of the paper. Was the president instructed to appoint a committee who would have the custody of that paper or not?

Dr. Crater. Yes, that is correct, but the committee was never appointed.

Mr. Barrett. Then do I understand the situation to be that Dr. Brown made a motion that the report which had just been presented by Dr. Watkins, be referred to a committee of three, that the president of the society, Dr. Crater, put that motion and the motion was carried; that after that a motion was made that the report be discussed?

The President. Yes.

Mr. Barrett. And that Dr. Brown raised the point of order that the report having been referred to a committee was not before the society for discussion. Is that the situation?

The President. That is correct.

Mr. Barrett. That would undoubtedly be the parliamentary situation. Any discussion that took place after that was merely permissive, simply because the members chose to talk and the president did not choose to restrain them.

Dr. Brown. Yes, I waived my point of order.

Mr. Barrett. So that left the situation that the report which had been received became the property of the society at large and stands on the minutes as referred to a committee of three which the Chair was to appoint and which has not been appointed, and there it should remain.

Dr. Brown. Therefore it remains in the hands of the president now occupying the chair to appoint the committee which was not appointed by the former committee, does it not?

Mr. Barrett. I have no doubt the president of the society would have the right to do anything that was omitted to be done at the previous meeting. The report it-

self would, of course, remain in the custody of the secretary as the recording officer of the society.

Dr. Luckey. As I understand Dr. Brown's position tonight his object is to prove conclusively that the report is yet the property of the society inasmuch as it must yet be in the hands of the president, not yet having been referred to a committee, and consequently could not legally be given out to anybody. Is that the position?

Dr. Brown. That is it, Mr. President. Before ITEMS OF INTEREST came out at all, as soon, in fact, as the article appeared in the *Montclair Times*, I made an appeal to the president, asking him to look into the minutes and decide as to the disposition of the report. That is correct, is it not, Dr. Osmun?

The President. That is correct, gentlemen.

Dr. Brown. And it was before this other matter came up at all that I made the appeal?

The President. Long before the issue of the September number of ITEMS OF INTEREST.

Dr. Brown. The executive committee were all out of town and the matter could not be acted upon. In the meanwhile this other matter of publishing the report came out. But the question of the investigation of the minutes and the disposition of the report was all started long before the present trouble arose.

Dr. Luckey. All this simply helps to strengthen the position of our counsel, in my opinion, in regard to the property rights of the society. As he stated the other night it is a fundamental principle that all these proceedings necessarily are property rights of the society; that is the society has absolute title.

Mr. Barrett. There can be no joint property in them, except where there is a joint production.

Dr. Luckey. They all remain the property of the society until, through legal channels, they are given to the public.

Mr. Barrett. Until their publication is authorized by the society.

Dr. Luckey. Then I do not know that it would be profitable for us to follow this any further than to empower our counsel in view of the letter we have already heard to go ahead with these proceedings restraining the Dentacura people. (A motion to this effect was adopted.)

The President. Dr. Frantz, the gentlemen would like to hear from you and you are accorded the privileges of the floor.

Dr. Frantz. Thank you, Mr. President. I came here this evening primarily for the purpose of defending our editor, Dr. Ottolengui, but in view of the disinterested evidence that has come to your hands by the reading of the letter of Mr. Lathrop, it is scarcely necessary for me to attempt anything in that line. It speaks for itself, and I think we ought to emphasize it by saying that he is as innocent of this matter coming into the hands of the Dentacura people as any man in this room. He was, of course, much exercised upon his return home from the Maine Woods, where he was at the time of the meeting at Asbury Park, for some time afterwards, to make the discovery that the report of the society, which had been entrusted to his stenographer, had gotten into the possession of Mr. Lathrop. Now that leaves the Consolidated Manufacturing Company as the guilty individual and excuses—well excuses are out of the question, there is no excuse; we can only make an explanation and give you the exact facts in connection with the matter.

At the Asbury Park meeting Mr. Lathrop was in attendance, and our vice-president, Mr. Murray, was there looking after the exhibit which we had on that occasion. Mr. Lathrop came to Mr. Murray and stated to him that a report of a committee appointed by the society had just been read; that he had called on the chairman of that committee to furnish him with a copy of the report—that the chairman of the committee told him that the proceedings of the meeting were to be published in the ITEMS pages, and that it could be obtained from the Consolidated. Mr. Murray then, without any thought in the matter, considering it as public property, that having been read, the matter was practically before the public, said, "Why, certainly, Mr. Lathrop, I do not see any reason why you shall not have the report," and he called our stenographer, who was taking notes of the meeting, and told her to give Mr. Lathrop a copy of the report, which she did. When the September issue of the ITEMS came out, my attention was very emphatically called to the Dentacura advertisement. Dr. Ottolengui came, in a very ruffled mood, to the office and wanted to know by what right or authority the Dentacura people said "By courtesy of the ITEMS OF INTEREST" this matter had been obtained. That led to investigation on my part, which developed the facts. Of course Dr. Ottolengui does not see the advertising pages. As soon as Dr. Ottolengui explained the position to me, I used my best efforts to check any injury that might attend the issuing of this report. I sent for Mr. Lathrop and explained to him that he had no right to this report, that it was put in our hands in trust, and that by a combination of circumstances he had gotten possession of it without any intent on the part of anyone in interest in the Consolidated Dental Manufacturing Company to do any injury to this society.

Dr. Hoblitzel. I would like to make a statement in regard to some of the remarks made by Mr. Lathrop. He says that I told him, time and time again, that I had been using Dentacura for months before. I did not know anything about it until a week or so before the meeting when he wrote to me saying he saw my name was on the committee, and sent me some samples. I did not even know I was on the committee until the receipt of that letter three or four weeks before the meeting commenced.

Dr. Luckey. Mr. President, will you call on some other members of the committee in regard to that, and I would like to finish it up.

The President. Dr. Watkins, you have the floor if you have any remarks to make.

Dr. Watkins. The report was written at the suggestion of Dr. Holly Smith, as has been mentioned here this evening. At his suggestion I took up the subject of prophylaxis and investigated along different lines and prepared this report. That report was prepared without any knowledge whatever on the part of anyone who was the proprietor or owner, in any way, of any article mentioned in it.

The report was taken to Asbury Park and there a meeting of the committee was called. I waited for some time, hoping to have a full committee meeting. Dr. Luckey not appearing on the scene, I called a committee meeting. At that meeting there were four out of the five members present. The paper was read and discussed; the committee were unanimous in regard to the paper and even went so far as to pass a vote of thanks to the chairman for writing the paper. Next day, as soon as I saw Dr. Luckey, I read the paper to him; he did not object to anything in the paper, but added one word to it, one preparation which he liked very much, zymocide. I think I am right; am I not, Doctor?

Dr. Luckey. That is right.

Dr. Watkins. The paper was then read at the open meeting. My object in reading that paper at the open meeting and not at the business meeting on Friday was twofold—I did not want to stay until Thursday because I had appointments at home, and besides I felt it was a subject of too much importance to appear with the business part of the meeting. I felt that it ought to be read at a full meeting where every one would have an opportunity to discuss it. I did think that the New Jersey State Dental Society, after the action taken the year previous on the subject of prophylaxis, would certainly think enough of the report to discuss the matter, and, if need be, correct it in such a way that they would have it in such form that they would not be ashamed of it, but would be proud of it—proud to have it go

out to the world. No one found any fault in the meeting and it was simply passed, and, as you will remember, even after it was referred to the committee, it was myself who rose and urged to have a discussion on the paper, and even then no one got up to say anything against it. I take no blame in this affair, not one iota. I blame the society itself. If it did not suit the society, then and there was the time and the opportunity to put it in such shape that it could be published as a part of the proceedings and go to the world and be a benefit to the dental profession.

Dr. Luckey. The only thing I want is to go on record in a way which I hoped would be recorded at our last meeting; our secretary failed to take down the subject of my remarks then, which were made with a view of placing matters right before the gentlemen of our society.

Mr. Lathrop said that I had recommended his Dentacura, and had known about it for nine months, and had spoken in high praise of it. Mr. Lathrop also said that there was a meeting of our full committee the night before, which had unanimously indorsed this preparation. It may have been a mistake, but if it was a mistake it seems to me Mr. Lathrop should have been a little more careful in making this statement, unless he had some personal advancement or pecuniary gain in view. I want it recorded now that my connection with this matter has been one of humiliation and pain. While I admit that I listened to the reading of that report, I certainly never would have signed a report written in the first person singular had I known it. I should have known it, as I heard it, but, as I have explained, I was listening to the paper being read and saluting different gentlemen as they came in the door, and I listened to that report, and signed it, as I have many others, innocently, but culpably. I am sorry my name is on it. It might have been of great benefit to the profession if it had been used properly, but, being used from this selfish standpoint by the proprietors of this one preparation, it has condemned the thing from every standpoint that any dental practitioner can look at it from. It could be of no benefit to our profession, nor do us any good, to praise that thing. It might be a benefit to the public, possibly, but to our profession, not at all.

Dr. Meeker. Does not Dr. Luckey want to mention what he told Mr. Lathrop?

Dr. Luckey. Yes, that is another important point. Mr. Lathrop came to me personally the day before this paper was signed, on Wednesday afternoon, right by his own stand; he said, "Dr. Luckey, I want you to give me an indorsement of this preparation; you know what it is." I said, "Mr. Lathrop, I do not know what it is; you sent me some samples, which I have given

out; people are in all the time and I have samples of all sorts of antiseptics and tooth washes and pastes and powders and frequently give it to people, but I cannot indorse them. If this was a good thing I would not indorse it for the simple reason that I have refrained for years, and have taken a special pride in the fact, from indorsing such things, for I felt it was an unworthy thing on the part of any dental practitioner to indorse any of these preparations; it is against the law and the spirit of our code of ethics. Moreover, I could not indorse it because you make misleading statements about it." He said, "Why, what do you mean?" I said, "Right on the back of your little folder you have got in large letters 'will prevent decay' (I think those are the exact words), or 'stops all decay,' or something to that effect; you know that is not so. A little further along you say it prevents tartar from gathering; you know that is not so." He undertook to argue with me that it was all right, that it was not misleading; that the antiseptic treatment was the treatment for the prevention of decay, and if persistently pursued and followed it must necessarily prevent decay, which, if we were to keep the mouth as I told him, constantly in a solution of antiseptic preparation, possibly would be true; but as people would use it only occasionally and were constantly eating and drinking, his preparation did not stop decay and could not stop it. I said, "The only reason you have it on there is to mislead people and make them use it in preference to something else that does not make the same claim." Whether he admitted that or not I don't remember, but it makes no difference.

Georgia State Dental Society.

30th Annual Meeting Held at Lithia Springs, Ga., June 7th-10th, 1898.

Discussion of Dr. Barker's Paper.

Dr. Crawford. I would not criticise Dr. Barker's paper; it is well written. But it is remarkable how this question of amalgam enlists the support of dentists everywhere. It is strange how many more men there are on the wrong side of this matter than on the right side; but, Mr. Chairman, I have determined to be on the right side. I am a religionist. I believe in God the Father, God the Son and God the Holy Ghost. I believe every statement in that remarkable Book from beginning to end. I believe as firmly as Job, in that prophetic statement he made: "Though after the flesh worms destroy my body, yet in my spirit I shall see God." I believe in the immortality of the soul as strongly as the old philosopher Plato did when he drank the hemlock and ended his life. I believe as strongly as St. Paul did when, on Mars Hill, he told them of the unknown God. But if you will show me the most objectionable doctrine I will show you one in which its followers will go furthest in advocating it, instead of believing in the simple story of the cross; instead of simply believing that there was once a sacrifice made for the sins of the whole world.

If you talk with the Baptists or Methodists, they lose sight of everything else in their tenacity regarding the doctrines of their particular creeds. So, when you come to dental surgery, you find this question of amalgam, one of the most stubborn, one of the most fallacious doctrines in the world. From Maine to California you will find at every convention from one to a half-dozen papers on amalgam; you can hear every kind of argument in support of it; nobody agrees about this thing. There is something wrong about it, radically wrong. We ought to agree on this thing. I will not be an advocate in favor of amalgam; it is pandering to the public taste, and it is vicious to the profession. It has hurt dental surgery; it has lessened the average length of human life; it will unfit us to conduct the affairs of Church and State. I am very earnest, Mr. President, and I am right about it. In employing amalgam, we are compromising with a dangerous thing—disease—because it induces disease.

Dr. W. G. Browne. Dr. Crawford, why do you consider amalgam so deleterious?

Dr. Crawford. I said yesterday it was because amalgam has a tendency to become spheroidal; it changes its shape in the cavity, and leakage follows. About seventy-five per cent. of gold fillings leak, and amalgam is worse. My main objection is from a mechanical standpoint. The motto of the homeopothists is, "Similia similibus"—like cures like. I agree with the homeopothists to this extent, that they do not believe in putting great gobs of amalgam in the teeth.

Dr. Jewett. Dr. Crawford does not like to talk unless he has somebody to oppose him. I believe I will tackle him on the line of Dr. Rosser's argument, and take his illustration to prove the fallacy of his own position. He refers to the Bible to show that those who advocate the use of amalgam are in a false position. Now, I can take the same line of argument and show that it is not the Convention that is at fault here, but Dr. Crawford. The Doctor is a regular fault-finder, on general principles, in regard to the use of amalgam. He is the regular Bob Ingersoll of Dental Conventions. Why? Ingersoll resorts to the Bible, not as a means of argument, but for the purpose of ridicule. We ask Dr. Crawford some question in regard to amalgam, as Dr. Browne did—why so and so is the case—and instead of answering it he will ridicule some blunder made with amalgam. He says he believes in the Deity, etc., and he says, there is trouble right among our Christian people—Baptists, Methodists, etc.? That is exactly what Ingersoll says; yet, if you bring these people down to the foundation of their belief, you find them recognizing the same God. While Ingersoll will stand on the doorstep and make fun of them because he cannot join them, these others will do so because they do not agree on some small point of doctrine. So it is with amalgam—the methods of manipulating it are different, but the object is the same, and that is the salvation of the teeth. I believe Dr. Crawford is sincere in his position; and no wonder he has no faith in amalgam and speaks of it in the contemptuous way he does if he uses it as he says—just takes it and "jabs it in a scooped out cavity." I am not an extremist in the use of amalgam. I do not believe in being extreme in anything; but amalgam properly employed is a good thing. Dr. Crawford, suppose you were doing a piece of crown and bridge work—you are an enthusiast on that subject—and in connection with it had to fill a cavity beneath the gum margin, would you not use amalgam?

Dr. Crawford. No, sir; I should use gold.

Dr. Jewett. What do you think of tin for filling cavities beneath the gum margin?

Dr. Crawford. No, sir; I am not an advocate of tin, either. You fill this cavity two-thirds full of tin, and I warrant you I can take an ordinary Donaldson broach and pierce through that tin filling. They put in twice as much tin as they can condense at the cervical wall. You must put gold there, and the moment gold comes in contact with tin you cannot condense it.

Dr. Jewett. That is true; if you do not put in small pieces of tin you cannot condense them. The same thing is true of gold, however; in either case you get beyond the power of your mallet stroke.

Dr. H. H. Johnson. Mr. President, I wish to present my side of the question. Dr. Crawford is inconsistent. He says there is "something wrong, radically wrong." I agree with him, there is something wrong. I venture to say that if a vote were taken of those present, you would not find one who does not sometimes use amalgam—except Dr. Crawford. Now, all these men cannot be wrong on this question. In almost any Dental Convention you will find the same thing true. Now, it may be true that Dr. Crawford is unusually expert in working gold, and unusually inexpert in working amalgam. I have seen this true in others. Mr. President, the object of the dental profession is to save teeth, and this cannot be done by following one narrow line of work. The man who does the best dentistry is he who differentiates; who can look at a tooth and tell what material is best adapted to its preservation—whether gold, amalgam or cement; they are all good, but should be used in the right place and at the right time. Another thing, Mr. President, Dr. Crawford said a number of dentists would kill people by subjecting them to a great nervous strain. Now, I would like to ask, why it is not more of a strain on the system to keep a patient in a chair for two hours, putting in a gold filling, than for a half-hour while inserting an amalgam filling. I know there are places where gold is superior to amalgam, and I believe there are places where amalgam is superior to gold; and there are cavities in the mouth where no man can place a perfect gold filling. I prefer to use amalgam in such cases, even though it shrink a little. Dr. Crawford also made the statement that amalgam decays more rapidly in saliva than gold. I think the reverse is the case. The oxide that surrounds amalgam fillings seems in some way to resist the acids of the mouth more thoroughly than gold does. The most excruciatingly sensitive cavities I have ever seen have been around gold fillings. Mr. President, these inconsistencies are the things which confuse the minds of young practitioners, those just entering the dental profession. These gentlemen, Mr. President, seem to do away with nerves. My patients have nerves. I can do gold work for

some patients, while for others I cannot begin to do it. In the case of children you cannot do the severe work you can for adults.

Dr. W. G. Browne. Mr. President, I was glad to bring Dr. Crawford around where he stated his objection to amalgam. He understood the question; it is on account of the general health, and not because amalgam does not save teeth. This question, gentlemen, you know has been under discussion in the profession for a good many years, and it is a subject worthy of our consideration, and no class of men are in a position to investigate this question as thoroughly as we can. Dr. Crawford is not a man to make a statement lightly; he is a thinking man; a man who is a close observer—I know of no man who observes more closely—and when he makes a statement I think it is worthy of the most serious consideration. Now, the point I want to call your attention to is this, if he is right we should investigate and settle this matter. Before taking my seat I want to take off my hat to Dr. Crawford because of his courage in expressing his convictions. The man who stands up and says he is right when everybody else says he is wrong has backbone.

Dr. Crawford. I want to make a statement. Dr. Johnson, in his usual dignified and quiet manner, said that the insertion of gold increased the severity of the operation. Every observing dentist knows that it is not the introduction of a filling by a skilful operator that causes pain, but the preparation of the cavity for its reception. We all agree that the same care and skill should be exercised in preparing cavities for the reception of the two materials. He says the rapidity with which amalgam can be worked is a point in its favor. This is true if a man should take a tooth that would hold fifteen to thirty grains of gold and pack away on it for four or five hours, but I do not know of a dentist who would do that.

Dr. Johnson. That is the point I made, Doctor, that you are particularly expert and rapid in manipulating gold, while many others are not.

Dr. Crawford. I think I am more expert in packing amalgam than gold.

Dr. S. W. Foster. Mr. Chairman, we all have a great appreciation for Dr. Crawford and his opinions. I believe I have learned more from Dr. Crawford than any other man in the dental profession. In 1881 I had the privilege of remaining in his office for a short time, and during that time he taught me a good many things; and among others he gave me a particularly clear explanation of his opinion regarding amalgam. I believe in a great degree that he is

correct. His position is certainly true from a hygienic standpoint, and this is the main point he makes. Among other things he said to me at that time—I remember he used almost the same words he made use of during this discussion—that many of the diseases to which the human family is subject come from the mouth, and are due to the presence of amalgam fillings. Like the other gentlemen who have spoken on this subject, I believe in the legitimate use of amalgam; that there are many instances in which it preserves teeth better than anything else. But it should never be used on account of its cheapness or the ease with which it can be manipulated.

Discussion of Dr. Manning's Paper.

Dr. Jewett. Mr. Chairman, it is a good paper, and the subject is attracting more attention than any other outside the profession for years. It has been discussed outside of dental societies until it is worn almost as threadbare as capping nerves. No good effect seems to result from talking dentistry to patients in the chair; we find that we have made very little, if any, impression on them. If they bring their children into our offices and we do work for them, when they reach home the burden on their minds is what it costs. As said in that paper, there is but one way to reach them, and that is through the children themselves. I am in hope that our State is taking steps in that direction. If we could have a text-book on this subject the parents would be able to appreciate the importance of it. They have a book on physiology, from which they gather a few points in a meager way, which is ridiculous; but if there should be a good text-book prepared on the subject of the mouth and teeth, by a competent person, it would impress the subject on their minds and they would take care of their teeth. The different States throughout the South and other sections are taking steps to bring this matter before the public and the educational boards. Let our Board be the first, or one of the first, to present this question of dental education.

Dr. F. S. Johnston. Mr. President, I would like very much to think that Dr. Manning's idea is feasible, but I cannot do it. His idea is to bring about a knowledge of dental subjects through the teachers. I do not think that can be done, for the simple reason that the teachers have so many subjects already they cannot give this one the proper attention. It seems to me the best plan would be to get the parents to give their children their special supervision. The children themselves will not do it. Show me the child under

sixteen or eighteen years of age who takes proper care of his or her teeth! Often by that time the harm is done. If we do not succeed in impressing the importance of this subject on the minds of the parents, there is no other way by which it can be done.

Dr. Browne. Mr. Chairman, I have a little to say on the subject. I must commend the paper which has just been read, from the fact that it goes to the point and brings out a practical suggestion that means business; and the suggestion which he offers is a good one—teaching the teachers so that they can teach the children. I had that fact very clearly demonstrated to my own mind recently by my own children who attend the public schools. One of them said to me the other day: "Father, the teachers ask us if we brush our teeth." The teachers, therefore, realize that it is an important subject, or they would not ask such a question. This paper, accordingly, commends itself to our consideration; and if the teachers can be prevailed on to keep the matter before the children it will be a step in the right direction.

Dr. A. M. Jackson. Mr. President, for years before becoming a member of this Society I wanted to be one. This Society has never done anything, I think, that is more important than the appointing of the committee to prepare a book on the subject of Dental Hygiene. It is one of the greatest moves ever made in the dental profession. I do not know of anything that I approved of more strongly than that movement when it was placed on foot. I think the paper read a very good one, indeed; one we should try to instill into the minds of the people. It will prove for good in the coming generation. We cannot reach the fathers and mothers of the country now; we cannot put the literature into their hands, but it can be taught in the public schools.

Dr. S. D. Rambo. Mr. President, I think the best method is to teach the children themselves. Dr. Adair, several years ago in Gainesville, gave a course of lectures on this subject in the seminary, and they were doing good. I think it is better for the children to be taught by dentists themselves than by the teachers.

Dr. Adair. Mr. President and gentlemen, I, of course, appreciate the paper very much and think it a step in the right direction. I have been interested in the subject for many years, and have always contributed any little mite I could along this line. As my friend Dr. Rambo says I was requested by the public, and teachers at the seminary to deliver several lectures on dental anatomy and hygiene, and they were well attended, and the fruits of my

efforts in that direction resulted in good. I delivered these lectures also in the public schools at Gainesville, through the invitation of the teacher. I exhibited several large drawings, among them one of the fifth nerve, and, after demonstrating these, I came down to the subject of dental hygiene. I took a Prophylactic brush and gave public demonstrations of how it should be used; also how to use floss-silk, quill toothpicks, etc., satisfactorily. You will not find a community in Georgia today better educated along these lines than that of Gainesville.

Dr. Manning. I would like to say this in answer to my friend, Dr. Johnston, who thinks there is no use to educate the children, but that the parents should be educated; if we can educate a few generations of children we will have the parents. Another speaker seems to think dentists should deliver lectures in the schools. I agree with this idea, but there should be a man regularly employed for this purpose, and not simply an occasional lecture.

Discussion of Dr. Ottolengui's Paper.

Dr. Jewett. Mr. Chairman, I have been using crystalloid gold for the past three years, and I believe it is the best tooth-preserver yet put upon the market. Before we can make a success with any material we must learn to work it. Some object to it, saying it is a lazy man's material. When it is used for this reason it is not a good material; and the same thing applies to amalgam or anything else. What gives gold its cohesiveness? Purity. Therefore, the slightest adulteration, contact with foreign substances, tend to impair its purity and destroy its cohesiveness; it is even slightly contaminated by necessary handling. Non-cohesive golds are made so by adulteration; they are not absolutely pure. Crystalloid gold is a compromise between cohesive and non-cohesive gold; in its working properties it resembles the non-cohesive. You can adapt this gold to the walls of the cavity, I believe, more perfectly than you can soft gold. In the case of other forms of gold, when you press upon it on one side of the cavity it leaves the other side. This is not the case with crystalloid. As I remarked just now, success depends upon the manner of working it. You cannot undertake to mallet it into a cavity as you can cohesive strips. It must be carefully placed and pressed into position, after which it can be condensed under the mallet. It is pure gold, and if it is properly handled I cannot see why it should not be as thoroughly condensed as any other pure gold. There is but one reason and that is because of placing too much in the cavity and trying to condense it with two or three strokes of

the mallet. This cannot be done; and yet, properly handled, crystalloid can be much more rapidly and easily worked, both for the operator and the patient, than other gold, and with more uniform results. Small pieces should be used, and each piece perfectly condensed, until the surface is as bright as with cohesive gold.

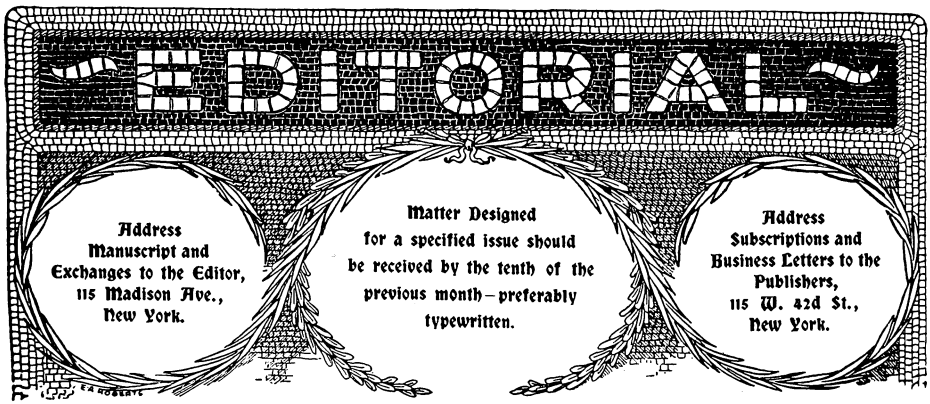
Dr. W. E. Rugg. Do you fill approximal cavities with it?

Dr. Jewett. Yes, you can fill any cavity with it.

Dr. Hanes. I am glad to hear what Dr. Jewett has said in regard to this crystalloid gold. When I was in his office about three years ago he did not like it. I have been using it about five years. I always finish my fillings with cohesive gold. I make no retaining-pits, but have undercuts, and use hand-pressure.

Dr. Jewett. I also do this, but my way of working it is to bring it right up to the margin of the cavity. Crystalloid gold is just as cohesive as the other. I finish up with the electric mallet, because there is less danger of fracturing the margins.

Dr. Jackson. Mr. President, I have been using crystalloid gold for the last year, and I find that it works beautifully in the approximal cavities of molars and bicuspids. I also use it in filling cavities in the labial surfaces of the incisors. It takes a nice polish, and condenses as thoroughly as any gold, as Dr. Jewett has said.



Property Rights in Society Papers.

We have omitted from this issue a number of important articles in order to make room for an early report of a special meeting of the New Jersey State Dental Society. This is done as a matter of justice, and in order that the New Jersey Society may not longer remain in a false position, into which it has been brought by a peculiar succession of circumstances.

The facts in brief are as follows: At the meeting of 1897 a committee was appointed to investigate remedies pertaining to oral prophylaxis. This committee prepared a report which was presented in due form, and read at one of the sessions of the meeting of this year. In this report a certain dentifrice was highly praised and recommended, with the result that the proprietors of that preparation, mindful of their own commercial interests and having been told in advance (so it is claimed) that their product would be praised, engaged a stenographer who took down the report as it was read. This was promptly published in a newspaper in New Jersey. Subsequently the agent of the dentifrice, learning that the report had been forwarded to this magazine, visited one of the members of the Consolidated Dental Manufacturing Company and asked permission to see the original copy of the report. This gentleman (likewise a purely business man and not learned in the niceties of professional ethics), thinking no harm could ensue, accorded permission, with the result that

the dentifrice people took the report and photographed the signatures, an act which was not contemplated when access to the report was granted. Finally, about two days before ITEMS OF INTEREST went to press, the agent of the dentifrice called upon the business manager and engaged advertising space, placing the advertisement which thus hurriedly was accepted and published in our last issue.

Prior to this, so it is rumored, a copy of the newspaper in which the report was first printed, was exhibited at the meeting of the National Association in Omaha, with the result that that body passed a resolution of censure against the New Jersey State Society for indorsing a proprietary remedy.

Members of the Society, smarting under this condemnation, and learning that the dentifrice people intended issuing a pamphlet in which the report would appear with the committee's names in *fac simile*, petitioned for a special meeting, which is fully reported in this issue.

The questions involved are of moment to all of our profession, and the account of the special meeting should be read carefully, with particular attention to the opinion of the Society's lawyer, which is given in full.

Unpublished Papers Are Property.

From the opinion rendered by this legal gentleman, and from other authorities, it seems clear that an unpublished manuscript is private property, which does not require a copyright as a protection, and any unauthorized use of such a manuscript is an invasion of property rights. If the manuscript is published, without the protection of a copyright, it ceases to be property, and may be used by all. Of course a copyright would protect the matter even after publication. The question next will turn upon the meaning of publication, since a manuscript may be published although not printed. Thus the production of a play is a publication of the manuscript thereof, and if no copyright has been taken in advance of such production it ceases to be private property. But the courts have held that such publication, or production, must be public, and public in this connection is interpreted to be in exchange for money paid, as when the audience is admitted by tickets which are sold. It has been decided that an author may read a manuscript play before a theatreful of invited guests, and his manuscript will not have been published or produced within the meaning of the law.

From this it would follow, that a paper read before a dental meeting where those present are the members and invited guests of the society, remains the private property of the society until published by authority specially conferred. Thus, had this particular report been published first in the scientific pages of ITEMS OF INTEREST, the dentifrice people would have been at liberty to use the matter in advertisements, but they had not the right to publish the report prior to that time. Indeed a committee report is more peculiarly the property of a society than a paper offered and read by some visitor, the former being prepared at the special instigation of the society and by a body of its own members specially nominated for the work.

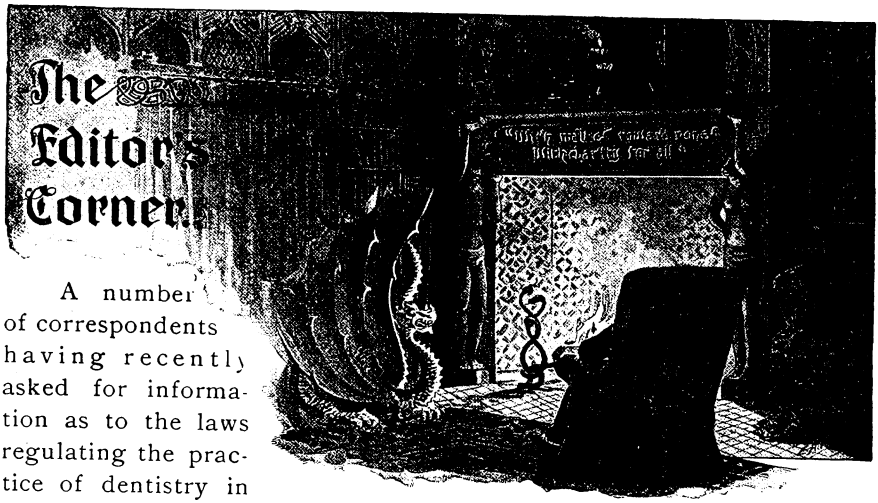
Peculiar Action of the National Association.

It has not been possible to obtain a copy of the resolution said to have been passed by the National Association, but there seems little doubt that such action was taken. In this, the National Association was guilty of a much more grievous wrong than the act which was condemned. The New Jersey State Society certainly, as a delegate body, was entitled to all the rights that would accrue to an individual member. Had the same resolution been aimed at an individual, there is little doubt that an action would lie in damages. An accusation apparently was brought against the New Jersey State Society, the evidence being a newspaper clipping, and without previous notice to the accused, a resolution of censure was passed. Thus an important body, a State Dental Society, was condemned unheard and without opportunity for defence. It might have been within the province of the National body to direct that a communication be sent to the New Jersey Society demanding an explanation. The hasty passage of a vote of censure was a gross breach of the code of ethics, and those who prompted it lead the Association into a grievous error.

But let us suppose for an instant that this report had been given to the world by authority of the New Jersey State Society (which is denied), would the censure of the National Association have been merited? It would seem not. If competent men are placed on a committee by a State Society, and these men conscientiously and capably perform the duty assigned, and report that a certain dentifrice is the best on the market, and may be safely recommended, it is entirely within the right of the

State Society to accept and indorse the report of its committee and to then announce to the profession that a reliable preparation is obtainable. It is inconsequential that the proprietors of the preparation should use this recommendation in advertising their wares. In fact such a course would actually be desirable as tending to make the action of the State Society far-reaching and beneficial to the public by helping them to save their teeth, which should be the highest aim of the profession of dentistry.

It would have been far more dignified and appropriate for the National Association to take up this matter by appointing from its own membership a committee of men with the chemical and other knowledge which would have fitted them for the work, and to have charged such a committee to examine into this subject of dentifrices, to the end that all of the profession might recommend the same tooth powder or tooth wash. If such a committee should find a reliable preparation already on sale, certainly this would be advantageous, rendering it more readily and quickly placed within the reach of the public.



A number of correspondents having recently asked for information as to the laws regulating the practice of dentistry in Mexico, the following is reprinted from the Mexican dental magazine, *La Revista Dental Mexicana:*

Dental Law of Mexico.

"At the present time any one may practice dentistry in Mexico by complying with the following regulations: The candidate applies to the School of Medicine for examination. A certificate stating that the candidate has had two years' experience in the office of a practicing dentist, must be filed with the application. Without further formality the School of Medicine appoints an examining committee composed entirely of physicians, who proceed to examine the applicant. An examination of this character is necessarily defective, because it is manifest that a committee composed solely of physicians cannot properly determine the knowledge of dentistry which the applicant may have.".

Painless Destruction of Calcified Pulp.

It is unfortunately not an uncommon experience in using arsenic for devitalizing pulps, to find cases where the medicament acts as an irritant to so great an extent, that the suffering following the dressing is so intolerable that the patient returns insisting that the dentist should afford relief. The arsenic is removed and an anodyne applied, with more or less (generally less) success in allaying the extreme pain. The throbbing pulp may be quieted and the patient dismissed, but no progress has been made. It is still necessary to remove the exposed or diseased pulp, and arsenic if again applied, produces a renewal of the experience of the previous day In some instances arsenical dressings have been placed and removed after one or two hours, for several successive days

before the pulp could be removed. Wherever such symptoms present, it is safe to diagnosticate calcification of the pulp. Whether the condition be one of general calcification, or one merely involving the presence in the pulp chamber of nodules, commonly known as "pulp stones," the result will be the same; the rapid action of the arsenic is prevented, and extreme pain is produced. To those who imagine that pulps of this character may be removed by cataphoresis, it may be stated that in several attempts the application of cocaine cataphoretically for periods varying from one to two hours, have proved ineffectual. In this connection the following experience may prove helpful, and is consequently recorded. The patient, a woman aged about forty, was brought in by a fellow practitioner, who reported that three applications of arsenic (mixed with various sedative drugs), made on different days, had all produced agonizing torture. The rubber dam was placed, and the cavity found to be excruciatingly sensitive, to such an extent that the decalcified dentine covering the pulp could not be removed. Cocaine cataphoresis of one hour failed to reduce this sensitiveness, and an application was then made of arsenious acid macerated into a paste with oil of cloves and cocaine crystals. This dressing was covered with temporary stopping. The patient suffered no discomfort and on the following day a large nodule was removed from the pulp chamber, exposing the bleeding pulp in the root canals, which still exhibited too much sensitiveness to be removed. The treatment by cataphoresis followed by the arsenical dressing was repeated, except that the current was utilized for only fifteen minutes, and at the next sitting, without intervening pain, the pulp was removed from all canals. The point of importance here is that though calcified or partly calcified pulps probably cannot be controlled by cocaine cataphoresis, so that they may be removed, nevertheless such treatment renders the arsenical application painless.

List of Early Dental Writers.

Actuated by the editorial in our last issue entitled "Forgotten Lore," Dr. T. S. Hitchcock, of Oswego, has kindly supplied for publication, a list of the early writers on subjects relating to dentistry. Dr. Hitchcock states that he copies this list from a work entitled "A Treatise on the Dental Art," by F. Maury, dentist of the Royal Polytechnic School, translated from the French by J. B. Savier, and published at Philadelphia by Lee & Blanchard in 1843. Many who are interested in the early history of dentistry, may find this list convenient, for which reason space is accorded.

A

Alberti, Halae 1737
Albrecht, Hombourg 1809
Allvey, Edimb 1788
Andree, Leipsic 1790
Angermann, Leipsic 1803
Apius, Ellangiae 1751
Arenius, Rostoc 1663
Arnemann, Goettingue 1802
Aronson, Berlin 1803
Aubry, Paris 1816
Audibran, Paris 1808
Aurivillius, Upsal 1757
Aussant, Paris 1828
Aurity, Paris 1812
Awzebi, Lyon 1771

B

Bauhinus 1660
Baumes, Paris 1806
Beaupreau, Paris 1769
Becker, Leipsic 1807
Bennet, London 1779
Berdmore, London 1770
Beurlin, Alart 1720
Bew, Ch. 1819
Blake, Edmb 1798
Blumenthal, Stendel 1799
Bollet, Paris 1820
Botet, Paris 1789
Bourdet, Paris 1754-6-9-62-4
Branchmaend, Leipsic 1733
Bendel 1697
Bring, London 1793
Bronwer, Leyden 1692
Brunner, J. B., Leipsic.....1766
Brunner, Ad. At., Wien 1771
Buchner, Hales 1752
Bucking 1805
Bunon, Paris 1741
Burlin, Altdorf 1720

C

Caigne, Fc., Paris.....1802
Campani, A., Fior.....1789
De Castrillo, Madrid 1557-70
Catalan, Paris 1826
Colondre, Geneve 1781
Corning, Helmstaedt.....1672
Cornelio, Torino 1818
Courtois, Paris 1775
Crause, Jena 1704
Crausius, Jena 1681
Cron, Lud., Leipsic.....1717
Cumme, Helmstaedt.....1760
Curtis, London 1769

D

Defritsch, Vienna 1772
Delabarre, Paris 1806-15-25
Delmond, Paris 1824-5
Deschamps, Paris 1804
Desirabode, Paris 1823
Despre, Erf 1720
Devant, Paris 1826
Downing, Richard, London..1815
Drouin, Strasbourg 1761
Dubois, Paris 1823
Dubois, De C., Paris ...1789-1824
Dubois, Foucou, Paris 1808
Duchmin, Paris 1759
Dupont, Paris 1633
Duval, Paris 1802-1825

E

Ehinger, Altdorf 1718
Eloy, Vienna 1772
Erastus, Tigur 1595
Eustachius, Venet 1574

F

Fauchard, Paris 1786
Fay, London 1827
Ficher, Leipsic.....1800
Finot, Paris 1813
Fleurimon, Paris 1682
Fonzi, Paris 1808
Fouchon, Paris 1775
Fox, Joseph, London 1803-6
Frank, Jenae 1692

G

Gallette, Mayence 1810
Gariot, Leipsic.....1806
Genlis, Leipsic 1786
Geoffroy, St. Hilare, Paris...1824
Geraudly, Paris 1737
Gerbaux, London 1823
Geshenck, Frankfort 1796
Gilles, Paris 1622
Giraud, Brannchew 1790
Glaubrecht, Argentoriati 1766

Gollin, Paris 1827
Geockel 1688
Goguelin 1804
Grousette, Paris 1803
Grun, Jena 1795
Geurtin, Paris 1819

H

Hebenstreist, Lipsiae 1738
Hebert, Altdorf 1778
Heister, Altdorf 1711
Hemard, Lyon 1582
Hernandez, Toulon 1808
Hertz, London 1815
Heslop, Leiden 1700
Heurnius, Leiden 1602
Heye, Helmstadii 1672
Hilscher, Jena 1748
Hoffman, Halae 1700
Horstius, Leipsic.....1595
Hunter, London 1771
Hurlok, London 1742

I

Ingolstetter, Leipsic 1795

J

Jackson, Edinburgh.....1778
Janke, Leipsic 1751
Jeron, Berlin 1804
Jetuze, Erfordiae 1732
Josse, Paris .....N. D.
Jourdan, Paris 1761
Jourdan, Nancy 1807
Junker, Halie 1740
Juncker, Braumschweig 1802

K

Kemme, Helmstadt, ...1740
Keocker, London 1826
Koenen, Franfit 1793
Kranse, Jenae.....1780
Krautermann, Arnstd 1738
Krebel, Leipsic 1800
Kuchler, Leipsic 1733
Kulenkamp, Harderow 1788

L

Laforgue, Paris 1802-10-16
Laubmeyer, Regiom 1745
Lavigna, Turin 1813
Lavini, Fiornza 1740
Lecluse, Nancy 1750-53-54-55
Legros, Paris 1812
Leichner, Erfort 1678
Lemaire, Jo, Paris.....1812-16
Leamiter, Paris 1784
Lemonier, Paris 1753-83
Lentin, Erschütting 1756
Leroy, Paris 1806
Leveque, Strasbourg 1823
Lewis, London 1772
Lichtenstien, A, Jh, L, Z....1812
Liddelins, Hamb 1626
Lima, Lyon 1788
Loeselus, Regiom 1639
Ludof, Erfort 1708-1822
Ludwig, Leipsic 1753
Longbottom, Baltimore ....N. D.

M

Maggiollo, Nancy 1807
Mahon, Paris .....N. D.
Marmot, Paris 1825
Martel, Paris 1807
Martin, Paris 1679
Maury, Paris 1820-22
Mekel, Hal 1792
Meyer, Hanau 1778
Meil, Paris 1808-10-26
Mebius, Jenae 1661
Monovius, Basil 1578
Mongin 1740
Monier, Paris 1783
Mortet, Paris 1802
Mouton, Paris 1786
Murphy, Jo, London 1811
Myrrhen, Giess 1693

N

Nicolai, Jenae 1799

O

Oetinger, Pub 1770
Ortlob, Lips 1694
Oudet, Paris 1823

P

Pacheus, Basil 1707
Paldamus, Haley 1799
Pallu, Turonib 1642

Parmly, L. S., London....1818-20
Parmily, El, London.....1821
Pasch, Jos., Wien 1767
Pauli, Hafnie 1639
Pestorf, Ultr 1699
Planer, Tul 1695
Plenck, Wien 1778-81
Plisson, Lyon 1781
Ploucquet, Tub 1794
Polh, Lips 1776
Posewitz, Vetrib 1790

R

Ran, Ludg., Bat 1694
Regnart, Paris 1818
Rengelmann, C. J., Arnstadt..1805
Ricci, Paris 1790-1816
Riniere, Paris 1811
Rolfinck, Jena 1669
Rousseau, Paris 1820-27
Roux, Paris 1825
Rubicki, Regiom 1803
Ruspini, London 1779

S

Scardovi, Argent 1645
Scheers, Trafect 1772
Schelhammer, Jena 1711
Schmidt, Gotha 1801
Schmiedel, Erf 1751
Sebiz, Argent 1645
Sennertus, Witteb 1629
Serres, Paris 1817
Sigmond, Bath 1825
Skiner, New York 1811
Stisser, Batavea 1675
Strasburg, Rigiomonti 1651
Streitlein, Altd 1688
Strobelberger, Leipsic 1630

T

Taveau, Paris 1826
Tinaeus, London 1769
Toirac, Paris 1823
Tolver, London 1752
Touchard, Paris 1814
Trastus, Tiguri 1595
Troubart, Mayenne 1824
Trecurth, Haley 1688
Tuller 1815

U

Vicher, Paris 1764
Valentini, Giess 1727
Van Der Belen, Lavan.....1782
Van Der Maessen, Gotha ..1802-7
Vase, Paris 1735
Vater, Witteb 1683
Vesti, Erf 1697
Vigier, Genev 1620
Varquelin, Paris 1825

W

Wagner, Jen 1798
Walkey, London 1793
Warenius, Rostoch 1663
Wedel, Jen 1678
Weyland, Argentorati 1771
Wooffendale, London 1788

Z

Zakbockfen, Arnhiem. 1804
Zbonatreit, Leibsic.....1738
Zeidler, Leipsic.....1631
Zigler, Renteln 1750
Ziegler, Ethafect 1613-1695

Appendix to List of Authors.

Ashburner, London 1834
Blandin, Paris 1836
Brown, Sol., New Yo 1833
Burdell, J. & H., New York.1838
Clark, J. P., London.....1836
Channing, Richmond, Va....1841
De Londe, London 1840
Ettmuller, Leipsic.....1798
Flagg, J. F., Boston 1832
Fuller 1815
Gray, John, London 1840
Harris, C. A., Baltimore 1841
Hitchcock, D. R., Boston...1840
Imrie, London 1835
Jamet, Paris 1839
Jobson, London 1835
Koecker, L., London 1835
Koecker, L., Philadelphia....1834
Lintod, London 1841
Lefoulon, Paris 1841
Linderer, C. J., Berlin.....1842
Murphy, J. L., London.....1837
Mallan, John, London 1835
Nicholles, John, London 1833
Nasmyth, A:, London.....1839-41
Parlmy, L. S., New York....1819
Purland, London 1831
Plough, New Orleans 1836
Robertson, W., London 1839
Spooner, New York 1836
Saunders, London .....N. D.
Snell, J. A., London & Phila..1832
Scott, London 1838
Spooner, New York 1835
Schange, J. M., Paris.....1842
Trinor, New York 1828-30
Waite, G., London & Phila.1830-38
Wardroper, W., London.....1838

Pithwood for Polishing Crowns.

Dr. W. H. Jones, of Fultonville, New York, makes the following practical suggestion:

"Jewelers' pithwood will be found a useful addition to the dental laboratory. In finishing a gold cap, press your cap in the end of a stick of pithwood. Trim off the surplus around the crown, and you can finish it up without fear of altering the shape of the cap. Run a wire through the stick and it will not break. It is inexpensive, and if once used, you will always have some on hand."

New York Odontological Society.

The New York Odontological Society will celebrate its thirty-first anniversary on Tuesday, January 17, 1899.

On this occasion the Society will hold an afternoon and evening meeting, and J. Leon Williams, L.D.S., D.D.S., of London, has prepared a paper for each session, and will be present to read them.

Afternoon Paper:

"On Certain Controversial Questions and Unsolved Problems in Dental Histology and Pathology."

A criticism of the recent paper on the structure of enamel, by Dr. Otto Waldkoff.

Further researches on enamel structure, with a critical review of the paper on tubular enamels recently presented before the Royal Society of Great Britain, by Mr. Charles S. Tomes, F.R.S.

An examination of the special forms of acid-forming bacteria found attached to the approximal surfaces of teeth.

A brief review of the work of Dr. Filandro Vicentini on the fructification of Leptothrix buccalis.

Illustrated by numerous photographs.

Evening Paper:

"Which Shall It Be, the Scientific or the Empirical Method?"

An examination of the present scientific status of the dental profession in America, as shown by its recent literature.

The results not altogether flattering.

Indifference towards scientific research.

The empirical spirit and method.

The scientific spirit and method.

Are we to have a trade or a profession?

The question not yet decided.

The duty of the colleges. The duty of the Societies. The duty of the individuals. The question of patents and secret preparations. The French Academy of Medicine. A plea for the formation of a new National organization with an established fund and State branches whose function it shall be to promote original research and all scientific work connected with the profession, and to examine and pass judgment upon all inventions, formulæ for remedies, etc., etc. Such an organization, if properly formed, and managed, certain to prove a wonderful stimulus to progress in all directions, and, at a single blow, to destroy all quack remedies and useless inventions. An advance of twenty years at a single step.

The unification of the State laws regulating practice.

Shall we go forward or backward?

B. C. NASH,
F. T. VAN WOERT,
W. W. WALKER, Chairman, 58 W. 50th St.
The Executive Committee.

G. V. Black Dental Club.

At the second annual meeting of the G. V. Black Dental Club, held May 5th, 1898, the following officers were elected: President, Dr. Glen F. Andrews; Vice-President, Dr. James E. Weirick; Secretary and Treasurer, Dr. J. Milton Walls; Corresponding Secretary, Dr. Russell W. Berthel.

J. M. WALLS, Secretary.

St. Paul, Minn.

Oklahoma Dental Association.

The Oklahoma Dental Association will meet in Oklahoma City October 10-11, during the great Free Street Fair. Reduced rates of half fare on all roads will be given.

An interesting programme is being prepared. All members of the profession are invited to attend.

ELMER E. KIRKPATRICK, D. D. S., Secretary,
Oklahoma City, O. T.

Programme of the Rochester Dental Society.

Sessions 1898-99.

Date, 1898.	Office of	Essayist.	Subject.	Discussion Headed by	Office Incidents, Headed by
Oct. 18,	Dr. F. M. Rood,	Dr. F. W. Proseus,	"Correlation of Fees in Dental Operations."	Dr. J. H. Beebee, Dr. F. A. Greene,	Dr. H. N. Holmes,
Nov. 15,	Dr. B. G. Saunders,	Dr. W. A. Windell,	"The Education of the Patient."	Dr. I. C. Edington, Dr. J. S. Furner,	Dr. W. A. White,
Dec. 20, 1899.	Dr. F. L. Sibley,	Dr. F. French,	"History of Dentistry in Rochester."	Dr. H. S. Miller, Dr. L. D. Walter,	Dr. R. Erler,
Jan. 17,	Dr. P. H. Smith,	Dr. J. H. Beebee,	"Cement Fillings."	Dr. R. H. Hofheinz, Dr. J. Requa,	Dr. L. Requa,
Feb. 21,	Dr. F. J. Tarrant,	Dr. R. H. Hofheinz,	"Treat. and Prep. of Teeth for Filling."	Dr. J. E. Line, Dr. C. F. Howell,	Dr. F. H. Lee,
Mar. 21,	Dr. D. H. Waugh,	Dr. F. M. Rood,	"Method of Treating Septic Teeth."	Dr. L. H. Gilbert, Dr. W. W. Belcher,	Dr. W. H. Barr,
Apr. 18,	Dr. W. A. Windell,	Dr. F. Messerschmitt,	"Systemic Treatment in Dentistry."	Dr. C. H. Nicholson, Dr. J. W. Cowan,	Dr. C. T. Howard,
May 16,	Dr. F. J. Woodworth,	Dr. F. H. Lee,	"Prosthetic Dentistry."	Dr. B. S. Hert, Dr. W. W. Smith,	Dr. P. H. Smith,
June 20,	Dr. J. W. Cowan.	Dr. F. J. Tarrant.	"The Year's Advancement in Dentistry."	Dr. F. L. Sibley, Dr. F. J. Woodworth.	Dr. L. S. Goble.

Observe

FIRST.—The place of meeting is to be held in alphabetical order of members.
SECOND.—A list of subjects has been prepared and arranged as stated herein.
THIRD.—Two members at each meeting are to head the discussion on the paper of the evening.
FOURTH.—A member at each meeting is to head the discussion under "Incidents of Office Practice."
FIFTH.—The question box is to be continued to all desiring information. Send questions to the Secretary.
SIXTH.—The Essayist is required to send his paper to the members discussing it at least one week in advance of meeting.
The Executive Committee expect to complete arrangements for at least one interesting special meeting during this winter's session.